RECR - 5

WORKPLANS

YEAR(S):
2007

INTERA Incorporated
6000 Uptown Blvd NE
Suite 100
Albuquerque, NM 87110
Telephone: 505 246 1600
Fax: 505 246 2600

July 16, 2007

Mr. Wayne Price, Bureau Chief
Oil Conservation Division
New Mexico Energy, Minerals, and Natural Resources Department
1220 South Saint Francis Drive
Santa Fe, NM 87505

RE: Phase I and II Remediation, Former Enersource Facility, Monument, Lea County, New Mexico

Mr. Price:

As mentioned in the cover letter to the Phase I and II Remediation Report for the above referenced project, the receipts for metal recycling were not available at the time the report was submitted. We have now received those receipts and copies are enclosed. If you have any questions please do not hesitate to contact me at (505) 246-1600.

Sincerely,
INTERA Inc.

Joe A. Galemore, P.G.
Project Manager

Enclosure

Permian Demolition Services, Inc.

P.O Box 4916 Odessa, Texas 79760
**
Fax #: (432) 582-0803

Send to: CRI	From: Ricky Gregory
Attention: Richard	Date: 7-11-07
Department:	Office Location: 2419 W. Murphy
Fax Number: 505 393-3615	Phone Number: 432-582-0800

Copies of tonnage from South Booster/Monument (7)

PERMIAN METAL COMPANY

D.B.A. PERMIAN DEMOLITION SERVICE, INC.

2419 W. Murphy • Odessa, TX 79763 • (432) 582-0800

11412

QUANTITY	ARTICLE	PRICES	AMOUNT
17.8	STEEL-PREPARED ___ UNPREPARED ___		
	CAR BODIES		
	TIN		
	CAST		
	BATTERIES		
	COPPER NO. 1		
	COPPER NO. 2		
	COPPER NO. 3		
	RED BRASS		
	YELLOW BRASS		
	UNCLEAN BRASS		
	RADIATORS		
	ALUMINUM CANS		
	ALUMINUM - CLEAN		
	ALUMINUM - IRONY		
	ACSR & NEOPRENE WIRE		
	GODLER - CLEAN ___ DIRTY ___		
	STAINLESS STEEL		
	LEAD		
	DIE CAST		
	MISC		
		TOTAL	

GROSS WT. 72760 lb 04:19 pm 06/20/07

TARE WT. 37360 lb 04:45 pm 06/20/07

NET WT. 35,620

Vendor warrants full title to or authority to sell listed materials; represents that listed materials are not, and are free from all, hazardous wastes (as defined in Federal or state regulations); and acknowledges receipt of stated funds.

Signature

6.20.07

DATE

200358 South Booster Pike

CUSTOMER D.L.

ADDRESS

CITY STATE ZIP

LATHAM PRINTING CO. · (432) 333-1202

PERMIAN METAL COMPANY

D.B.A. PERMIAN DEMOLITION SERVICE, INC.

2419 W. Murphy • Odessa, TX 79763 • (432) 582-0800

11407

QUANTITY	ARTICLE	PRICES	AMOUNT
19.35 NT	STEEL-PREPARED ____ UNPREPARED ____		
	CAR BODIES		
	TIN		
	CAST		
	BATTERIES		
	COPPER NO. 1		
	COPPER NO. 2		
	COPPER NO. 3		
	RED BRASS		
	YELLOW BRASS		
	UNCLEAN BRASS		
	RADIATORS		
	ALUMINUM CANS		
	ALUMINUM - CLEAN		
	ALUMINUM - IRONY		
	ASCR & NEOPRENE WIRE		
	COOLER - CLEAN ____ DIRTY ____		
	STAINLESS STEEL		
	LEAD		
	DIE CAST		
	MISC		
		TOTAL	

GROSS WT. 76320 lb 03:21 PM 06/19/07
37620 lb 03:34 PM 06/19/07

TARE WT. _____

NET WT. 38,700

Vendor warrants full title to or authority to sell listed materials; represents that listed materials are not, and are free from all, hazardous wastes (as defined in Federal or state regulations); and acknowledges receipt of stated funds.

Victor
Signature

6.19.07
DATE

200358 South Booker Rd
CUSTOMER D.L. Monument

ADDRESS

CITY STATE ZIP

LATHAM PRINTING CO. - (432) 333-1292

PERMIAN METAL COMPANY

D.B.A. PERMIAN DEMOLITION SERVICE, INC.

2419 W. Murphy • Odessa, TX 79763 • (432) 582-0800

11398

QUANTITY	ARTICLE	PRICES	AMOUNT
18.53 NT	STEEL-PREPARED ✓ UNPREPARED ____		
	CAR BODIES		
	TIN		
	CAST		
	BATTERIES		
	COPPER NO. 1		
	COPPER NO. 2		
	COPPER NO. 3		
	RED BRASS		
	YELLOW BRASS		
	UNCLEAN BRASS		
	RADIATORS		
	ALUMINUM CANS		
	ALUMINUM - CLEAN		
	ALUMINUM - IRONY		
	ASCR & NEOPRENE WIRE		
	COOLER - CLEAN ____ DIRTY ____		
	STAINLESS STEEL		
	LEAD		
	DIE CAST		
	MISC		
		TOTAL	

GROSS WT. 75020 lb 03:13 PM 06/19/07

TARE WT. 37960 lb 03:27 PM 06/18/07

NET WT. 37,060

Vendor warrants full title to or authority to sell listed materials; represents that listed materials are not, and are free from all, hazardous wastes (as defined in Federal or state regulations); and acknowledges receipt of stated funds.

Signature

6.18.07
DATE

11337 South Booker
CUSTOMER D.L.

ADDRESS

CITY STATE ZIP

LATHAM PRINTING CO. - (432) 333-1292

PERMIAN METAL COMPANY

D.B.A. PERMIAN DEMOLITION SERVICE, INC.

2419 W. Murphy • Odessa, TX 79763 • (432) 582-0800

11386

QUANTITY	ARTICLE	PRICES	AMOUNT
18.27	STEEL-PREPARED ✓ UNPREPARED		
	CAR DOORS		
	TIN		
	CAST		
	BATTERIES		
	COPPER NO. 1		
	COPPER NO. 2		
	COPPER NO. 3		
	RED BRASS		
	YELLOW BRASS		
	UNCLEAN BRASS		
	RADIATORS		
	ALUMINUM CANS		
	ALUMINUM - CLEAN		
	ALUMINUM - IRONY		
	ASCR & NEOPREME WIRE		
	COOLER - CLEAN_____ DIRTY		
	STAINLESS STEEL		
	LEAD		
	DIE CAST		
	MISC		
		TOTAL	

GROSS WT. 74040 lb 02:59 pm 06/15/07

TARE WT. 37500 lb 03:37 pm 06/15/07

NET WT. 36,540

Vendor warrants full title to or authority to sell listed materials; represents that listed materials are not, and are free from all, hazardous wastes (as defined in Federal or state regulations); and acknowledges receipt of stated funds.

Victor Duff

Signature

6.15.07

DATE

200358 Buster Lake

CUSTOMER D.L.

ADDRESS

CITY STATE ZIP

PERMIAN METAL COMPANY

D.B.A. PERMIAN DEMOLITION SERVICE, INC.

2419 W. Murphy • Odessa, TX 79763 • (432) 582-0800

11376

QUANTITY	ARTICLE	PRICES	AMOUNT
18.41 MT	STEEL-PREPARED ✓ UNPREPARED		
	CAR DOORS		
	TIN		
	CAST		
	BATTERIES		
	COPPER NO. 1		
	COPPER NO. 2		
	COPPER NO. 3		
	RED BRASS		
	YELLOW BRASS		
	UNCLEAN BRASS		
	RADIATORS		
	ALUMINUM CANS		
	ALUMINUM - CLEAN		
	ALUMINUM - IRONY		
	ASCR & NEOPREME WIRE		
	COOLER - CLEAN_____ DIRTY_____		
	STAINLESS STEEL		
	LEAD		
	DIE CAST		
	MISC		
		TOTAL	

GROSS WT. 83600 lb 11:27 am 06/14/07

TARE WT. 46780 lb 11:48 am 06/14/07

NET WT. 36,820

Vendor warrants full title to or authority to sell listed materials; represents that listed materials are not, and are free from all, hazardous wastes (as defined in Federal or state regulations); and acknowledges receipt of stated funds.

Signature

6.14.07

DATE

Monument 200358

CUSTOMER D.L.

ADDRESS

CITY STATE ZIP

LATHAM PRINTING CO. - (432) 332-1292

PERMIAN METAL COMPANY
D.B.A. PERMIAN DEMOLITION SERVICE, INC.
2419 W. Murphy • Odessa, TX 79763 • (432) 582-0800

11334

QUANTITY	ARTICLE	PRICES	AMOUNT
	STEEL-PREPARED, UNPREPARED		
	CAR BODIES		
	TIN		
	CAST		
	BATTERIES		
	COPPER NO. 1		
	COPPER NO. 2		
	COPPER NO. 3		
	RED BRASS		
	YELLOW BRASS		
	UNCLEAN BRASS		
	RADIATORS		
	ALUMINUM CANS		
	ALUMINUM - CLEAN		
	ALUMINUM - IRONY		
	ASCR & NEOPRENE WIRE		
	COOLER - CLEAN ____ DIRTY ____		
	STAINLESS STEEL		
	LEAD		
	DIE CAST		
9.25	MISC Vehicles		
		TOTAL	

GROSS WT. 62360 lb 08:19 am 06/06/07

TARE WT. 43860 lb 09:08 am 06/06/07

NET WT. 18,500

Vendor warrants full title to or authority to sell listed materials; represents that listed materials are not, and are free from all, hazardous wastes (as defined in Federal or state regulations); and acknowledges receipt of stated funds.

Signature Victor Lowboy

DATE 6.6.07

CUSTOMER 200340 Y Monument D.L.

ADDRESS

CITY STATE ZIP

PERMIAN METAL COMPANY
D.B.A. PERMIAN DEMOLITION SERVICE, INC.
2419 W. Murphy • Odessa, TX 79763 • (432) 582-0800

11374

QUANTITY	ARTICLE	PRICES	AMOUNT
20.26	STEEL-PREPARED, UNPREPARED ✓		
	CAR BODIES		
	TIN		
	CAST		
	BATTERIES		
	COPPER NO. 1		
	COPPER NO. 2		
	COPPER NO. 3		
	RED BRASS		
	YELLOW BRASS		
	UNCLEAN BRASS		
	RADIATORS		
	ALUMINUM CANS		
	ALUMINUM - CLEAN		
	ALUMINUM - IRONY		
	ASCR & NEOPRENE WIRE		
	COOLER - CLEAN ____ DIRTY ____		
	STAINLESS STEEL		
	LEAD		
	DIE CAST		
	MISC		
		TOTAL	

GROSS WT. 75860 lb 04:17 pm 06/13/07

TARE WT. 35340 lb 05:17 pm 06/13/07

NET WT. 40520

Vendor warrants full title to or authority to sell listed materials; represents that listed materials are not, and are free from all, hazardous wastes (as defined in Federal or state regulations); and acknowledges receipt of stated funds.

Signature #1 Victor

DATE 6.14.07

CUSTOMER [illegible] D.L.

ADDRESS

CITY STATE ZIP

LATHAM PRINTING CO (432) 333-1232

DRAFT

WORK PLAN for PHASE II REMEDIATION

Former Enersource Facility, Monument, New Mexico

Submitted to:

State of New Mexico Energy, Minerals & Natural Resources Department
New Mexico Oil Conservation Division

Submitted by:

INTERA Incorporated
6000 Uptown Blvd. NE, Suite 100
Albuquerque, New Mexico 87110

May 10, 2007

TABLE OF CONTENTS

FIGURES

APPENDICES

1. INTRODUCTION

This work plan, which includes a scope of work (SOW) and cost estimate, is being submitted for the removal of buried metal pipe/debris at the former Enersource facility (Site) in Monument, Lea County, New Mexico. A project location map is provided in Figure 1.

This work plan was prepared in response to a verbal request from Mr. Ben Stone of the New Mexico Oil Conservation Division (NMOCD) to Joseph Tracy and Joe A. Galemore of INTERA Inc. (INTERA) on December 27, 2006. Work is being authorized by purchase order #s 52100-4048 dated February 12, 2007 and 52100-4634 dated March 14, 2007. The cost estimate provide in Appendix A is based on State of New Mexico, General Services Department, Pricing Agreement # 61-805-09-18553 dated June 29, 2006.

2. SITE DESCRIPTION AND PROJECT BACKGROUND

The Site covers 9.56 acres and is located in the northwest quarter of Section 1, Township 20 South, Range 36 East, Lea County, New Mexico (Figure 1). The Site is at an elevation of approximately 3,580 feet above mean sea level. The surface in the vicinity slopes down from northwest to southeast at a gradient of approximately 0.003 feet/foot (16 feet/mile). Monument Draw, a northwest to southeast flowing intermittent stream is located about 2-1/2 miles south of the Site.

Land in the area is used for oil and gas exploration/production and cattle ranching. The Versado Gas Processing Plant (remediation permit # 1R-281) is located immediately adjacent to the northern property boundary. El Paso Natural Gas operates a facility within 500 feet of the eastern property boundary. Numerous oil/gas wells, pump jacks, and storage tanks are in the vicinity. The estimated property boundary and the fenced area believed to have been used by Enersouce operations are illustrated on Figure 2.

INTERA contacted Mr. Cal Wrangham of Targa Resources, Inc concerning investigations and remediation at the adjacent Versado Plant. Mr. Wrangham informed INTERA that ground water flow to the south, southeast and the depth to water ranges from about 25 to 35 feet below ground surface. The estimated locations of water wells in the area as determined by searching the New Mexico Office of the State Engineer WATERS database are illustrated on Figure 1. The closest well is a domestic supply well located approximately 2,000 feet north of the Site; no information concerning depth to water was provided in the WATERS database. The next closest well is also a domestic supply well located about 3,000 feet east of the Site. The WATERS database lists the depth to water in this well as 40 feet bgs.

Based on historical aerial photographs taken in 1949, 1966, and 1978 (see Figures 3 through 5), it appears that major development at the Site occurred after 1949. The aerial photograph taken in 1949 (Figure 3) reveals one large tank that straddles the Site boundary, but, with the exception of some roads, the remainder of the Site is undeveloped. The 1966 (Figure 4) and 1978 photographs (Figure 5) show numerous (> 25) above ground tanks located within or slightly

outside the property boundary. The tanks are arranged into an eastern and a western cluster. The tank sizes within the western cluster are, in general, larger than the tanks in the eastern cluster. The two clusters of tanks are separated by a central area that contains buildings and, based on the shape of the shadows, tall narrow structures. Mr. Larry Parker, a long time resident of Lea County, stated that the Site was used as a jet fuel refinery during this time period. Therefore, these tall, narrow structures formerly located in the central part of the Site may be cracking or distillation towers. Given the larger tank sizes, the western part of the property was probably used for crude storage; and the eastern cluster was used for product storage. A tractor trailer truck can be seen in the 1978 aerial photograph (Figure 5) just north of the central processing area; this area may have been used for product loading.

It is unknown how long refinery operations occurred at the Site. Based on information obtained from the Lea County Tax Assessor, Enersource became the property owner in 1985. Our understanding is that Enersource used the facility to reclaim crude oil until sometime prior to 2006 when INTERA was contracted by OCD. Mr. Parker stated that the structures formerly located in the central part of the Site were dismantled and sold for scrap. The structures and materials that were not sold were buried in the west-central portion of the Site. It is unknown when this occurred.

INTERA was contracted in 2006 to test the existing ASTs and fluids/sludge for naturally occurring radioactive materials (NORM) and subsequently remove these materials from the Site. The tanks illustrated in Figure 2 and some underground piping were removed from the Site and disposed of at an off-Site facility in the summer of 2006. During the removal action, soil samples were collected at eight (8) locations from a depth of 3.25 feet below ground surface across the site and the samples were analyzed for total petroleum hydrocarbons (TPH), diesel range and motor oil range organics (DRO and MRO), and chlorides. Locations of tanks, samples, and analysis results are illustrated on Figure 2.

On April 10, 11, and 12, 2007, a geophysical survey was performed with the purpose of identifying buried, metal objects at the Site. The survey revealed the presence of several thousand feet of underground piping and large metal objects scattered throughout the Site. A map illustrating the approximate locations of buried pipes and buried metal objects are illustrated on Figure 6. The refinery materials reportedly buried on Site may be located between 200E to 300 E and 100N to 300N on Figure 6. A copy of the geophysical report prepared by Sunbelt Geophysics is included in Appendix B.

3. REMEDIATION ACTION LEVELS and EXTENT OF CONTAMINATION

Action levels for soil at the Site were provided by Mr. Glenn VonGotten of OCD and are as follows:

- Benzene — 0.2 milligrams (mg)/Kilogram (kg)
- BTEX — 50 mg/kg

- TPH (GRO [C6-C10]) and DRO [C10 – C28]) by 8015 — 500 mg/kg
- TPH by 418.1 — 2500 mg/kg
- Chlorides (300.1): — 500 mg/kg to 6' BGS and
- Chlorides (300.1) — 1000 mg/kg below 6' BGS.

As indicated on Figure 7, three areas of petroleum impacted soils were discovered during Phase I activities. The northern portion of the site is an area that was apparently used by Enersource, and the former refinery for loading and unloading product and may have contained a disposal pit (See Figure 4). Sample # 1, which was collected in this area, contained 15,400 mg/kg TPH (DRO [C10 to C 28] and MRO [C 28 – C36]), the highest concentration of TPH contained within the soil samples tested. The western portion of the site is in an area that contained numerous ASTs, a disposal pit, and miscellaneous debris. This area is believed to have been used for crude storage. Three soil samples were collected in this area. Two of the samples (# 5 and # 8) did not contain TPH at concentrations above the laboratory practical quatification limit (PQL); however, sample # 6 contained TPH (DRO) at a concentration of 2,900 mg/kg. The eastern portion of the Site includes an area containing numerous ASTs that were believed to have been used for product storage. Three soil samples were collected from this area, but only one contained TPH above action limits. Soil sample # 3 contained TPH (DRO) at a concentration of 3,600 mg/kg. Relative to the other areas, chloride concentrations were high in the area # 3. Chloride concentration in samples # 2 and 3 were greater than 500 mg/kg; whereas, the highest concentration of chloride in other soil samples was 220 mg/kg in sample # 8 taken from area 2.

4. SCOPE OF WORK

INTERA has divided the project SOW into the following three (3) tasks:

- Task 1 – Project Planning and Scheduling;
- Task 2 – Buried pipe/debris removal; and
- Task 3 – Reporting.

4.1 Task 1: Project Planning and Scheduling

This task includes project planning and scheduling activities and includes the development of this work plan. Other project planning and scheduling activities include (1) setup of project files (electronic and hard copy), (2) revision of the site specific health and safety plan and compilation of appropriate INTERA standard operating procedures, (3) subcontracting of buried pipe/debris removal, (4) right of entry permitting with New Mexico State Land Office and (5) scheduling of field activities. Once the schedule is developed and prior to mobilization to the field, INTERA will perform a New Mexico-required "One-Call" to identify the approximate locations of documented underground utilities at the Site.

4.2 Task 2:Buried Pipe/Debris Removal

Task 2 will include the removal of buried metal pipe and debris identified in the geophysical survey. Once removed, the piping will be stockpiled on site, surveyed for NORM, and recycled or disposed of off-site. Trenches will be backfilled with the soils excavated during pipe/debris

removal. In the event liquids are encountered in the lines, the liquids will first be drained into the trench containing the piping and then immediately pumped into a DOT approved 55-gallon drum. Assumptions of this task include:

- NORM values for the tested materials will be below the action limit of 50 microroentgens per hour above background levels;
- Eighteen loads of metal will be taken to the recycler;
- Three loads (60 cubic yards) of debris will be taken to the landfill; and
- Five loads (50 barrels) of liquids will be transported and disposed of at CRI's liquid waste disposal facility.

We plan to start this task the week of May 14, 2007 and twenty-six days have been budgeted to complete this task. It should be noted, however, that there is considerable uncertainty in the amount of pipe/debris at the Site and the degree of difficulty in excavating these materials. Consequently, the estimated time to complete this subtask is also uncertain.

4.3 Task 3: Reporting

Upon the culmination of task 2, INTERA will complete a report documenting results of Phase I and Phase II activities. The report will include at a minimum:

- A site map showing buried pipelines, electrical hazards, Site boundaries, and sampling locations;
- NORM survey results;
- The volume of material removed from the tanks, disposal/reclamation company used and the volume of recoverable hydrocarbons retrieved;
- Tank reclamation or scrap iron facility used;
- Volume/weight of miscellaneous debris removed and the disposal/recycling company used;
- Results of analytical data gathered;
- Boring logs and field screening results;
- Geophysical report
- A map/cross section showing the locations, depths, and concentrations of total petroleum hydrocarbons in soil contamination areas;
- Photographic documentation of Phase I and II activities;
- Estimates of the volume and cost to remove all material determined to be contaminated based on the Phase II investigation. An estimate for the cost of placing clean fill in the excavated areas will also be generated. INTERA will follow the NMOCD suggestion to transport clean fill from a landfarm location to help decrease transportation charges; and
- Estimates of the volume and cost to excavate and construct compost piles on site. The contaminated material should be mixed at a 4:1 ratio with manure and enough water to keep the piles moist, per the NMOCD request. The piles are to be turned every four weeks for at least four turning events. Estimates will include costs to backfill and compact the excavations and contour the Site with the remediated compost material.

5. SCHEDULE

INTERA will begin work the week of May 14, 2007. We understand that the work needs to be completed and billed by June 30, 2007.

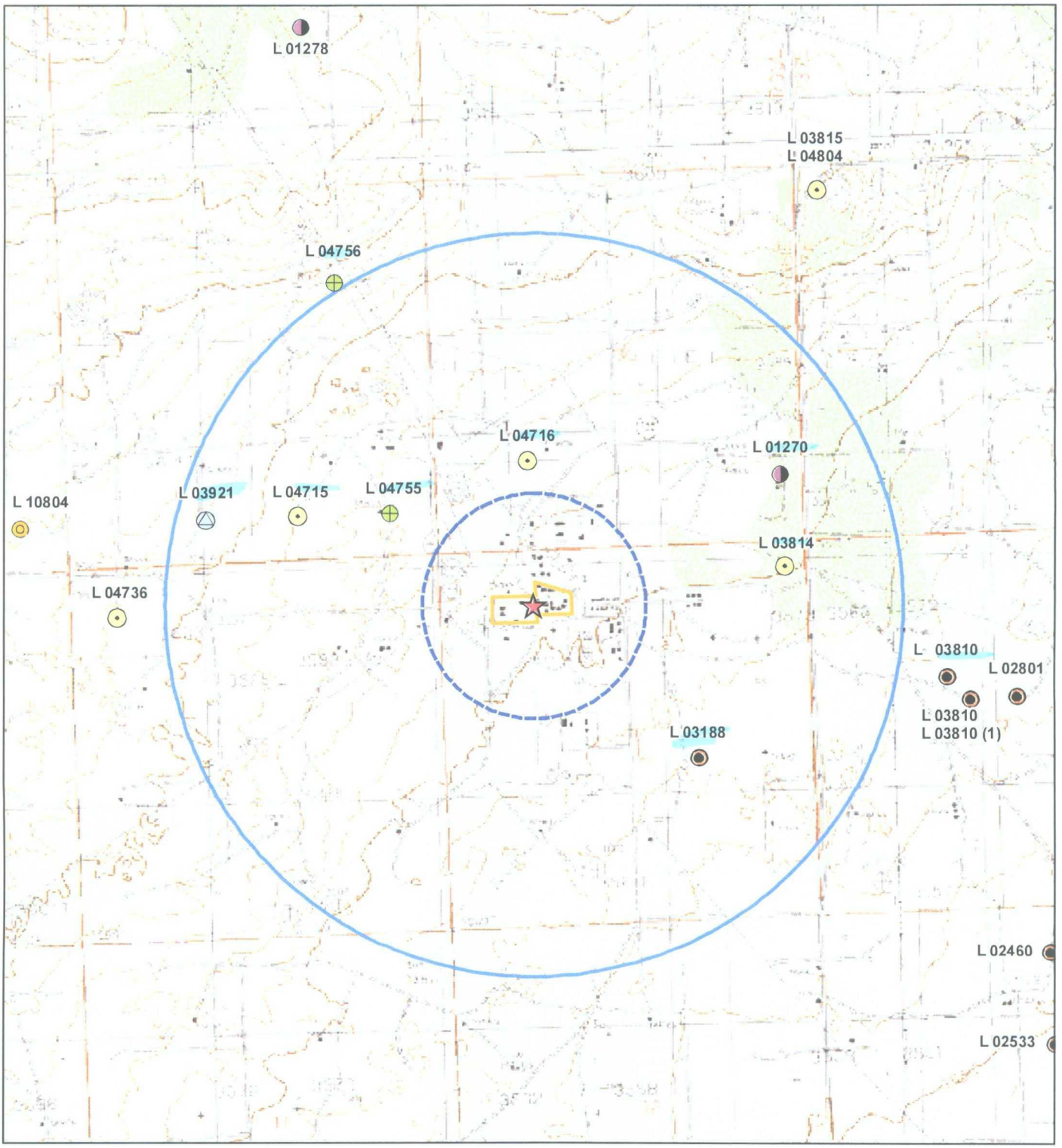
6. COST ESTIMATE

The cost estimate to provide the services described above is provided in Appendix A. INTERA's services will be provided on time and material price basis. INTERA will not exceed these costs without first requesting and then obtaining approval for an amendment to this budget.

7. PERSONNEL

The key personnel who will be responsible for completion of the project are listed below along with their areas of responsibility.

Ms. Cindy Ardito, Principal	Ms Ardito will be briefed on project activities and will review deliverables. She will be responsible for INTERA resource allocation.
Mr. Joe A. Galemore, Senior Project Manager	Mr. Galemore will provide Client interface, project management, and development of work plan and report documents.
Mr. Joseph J. Tracy, PG – Project Geologist	Mr. Tracy will serve as project advisor. Mr. Tracy has been involved with this project from its inception and will be consulted and briefed on all aspects of this phase of work.
Mr. Joe Hillar, – Staff Scientist	Mr. Hiller will oversee pipe removal and will assist in report preparation.
Mr. Konrad Clark – Field Technician II	Mr. Clark was on site during the performance of Phase I activities so will be consulted concerning Phase I results. Mr. Clark will also assist in final report development.



USGS 7.5 Minute Topographic Map: Monument North, Monument South Quadrangles, 1985, Contour Interval 5 Feet
Site Location: NW¼ Sec. 1; T20S; R36E

Source(s): Top map – MapTech

0 1,000 2,000 4,000 Feet

N

S

Legend

- Property Boundary
- 1,000 Foot Radius
- 1 Mile Radius
- WATERS Database Well Location
- DOM - Domestic
- PRO - Prospecting/Dev. of Natural Resources)
- EXP - Exploration
- MUL - Multiple Domestic
- POL - Polution Control
- STK - Livestock Watering

INTERA

Figure 1
Project Location Map
with Vicinity Wells

Enersource Site – Monument, NM

T:\Projects\OCD - Enersource Facility\graphics\Monument NM\GIS\ES_figure1.mxd 02-21-07

Source(s): 2005 aerial photo – MapTech.

N

S

0 50 100 200 Feet

Legend

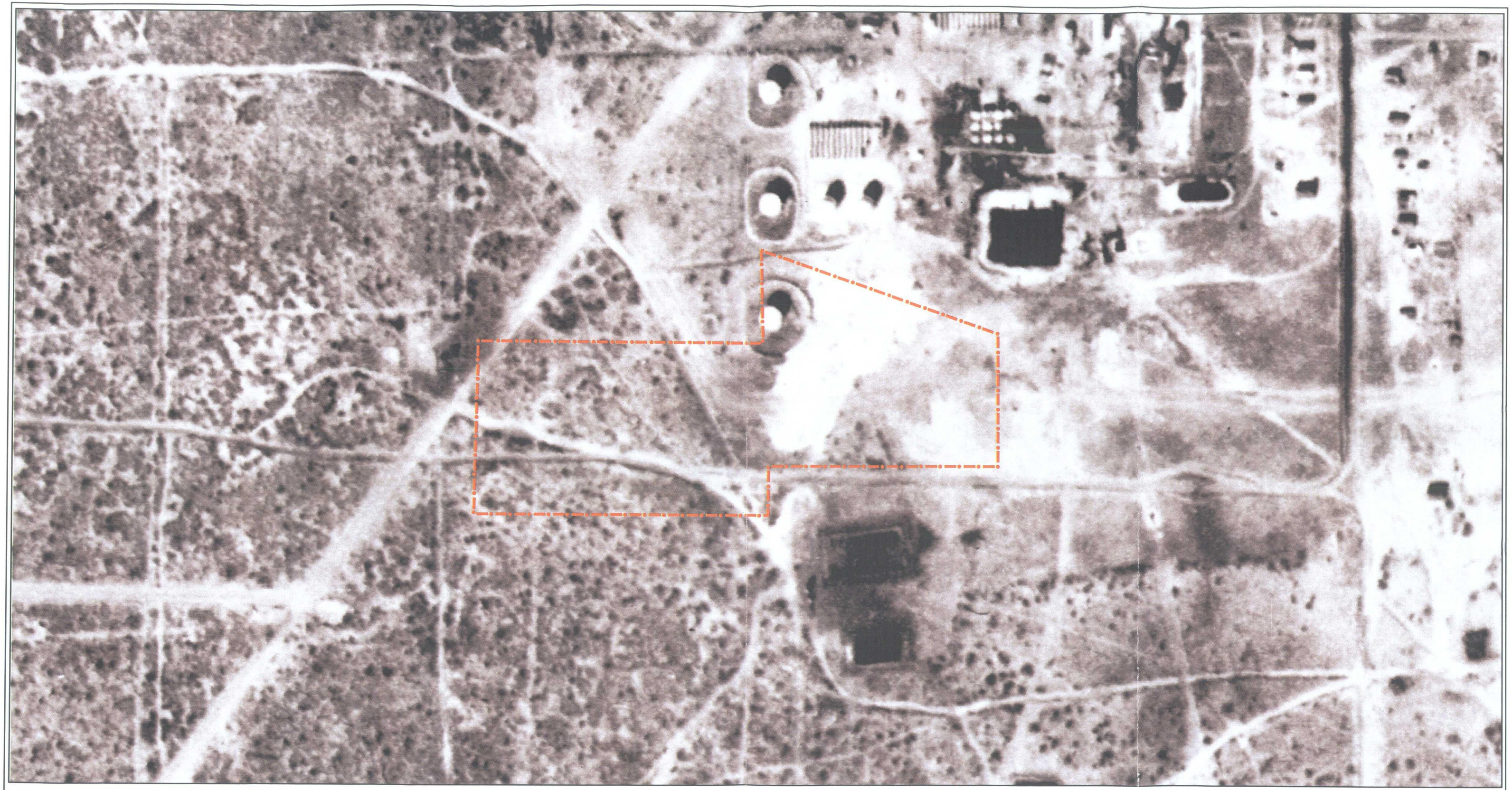
- Property Boundary
- Barbed Wire Fence
- Cinder Block Fence

INTERA

Figure 2
Site Plan – 2005 Aerial Photograph

Enersource Site – Monument, NM

T:\Projects\OCD - Enersource Facility\graphics\Monument NM\GIS\ES-fig_2.mxd 05-09-07



Source(s): 1949 aerial photo – Earth Data Analysis Center.

N

S

0 100 200 400

Feet

Legend

Property Boundary

Figure 3
1949 Aerial Photograph

Enersource Site – Monument, NM

INTERA

T:\Projects\OCD - Enersource Facility\graphics\Monument NM\GIS\ES_fig_3.mxd 05-09-07

Source(s): Aerial photo – Earth Data Analysis Center

N

S

0 100 200 400 Feet

Legend

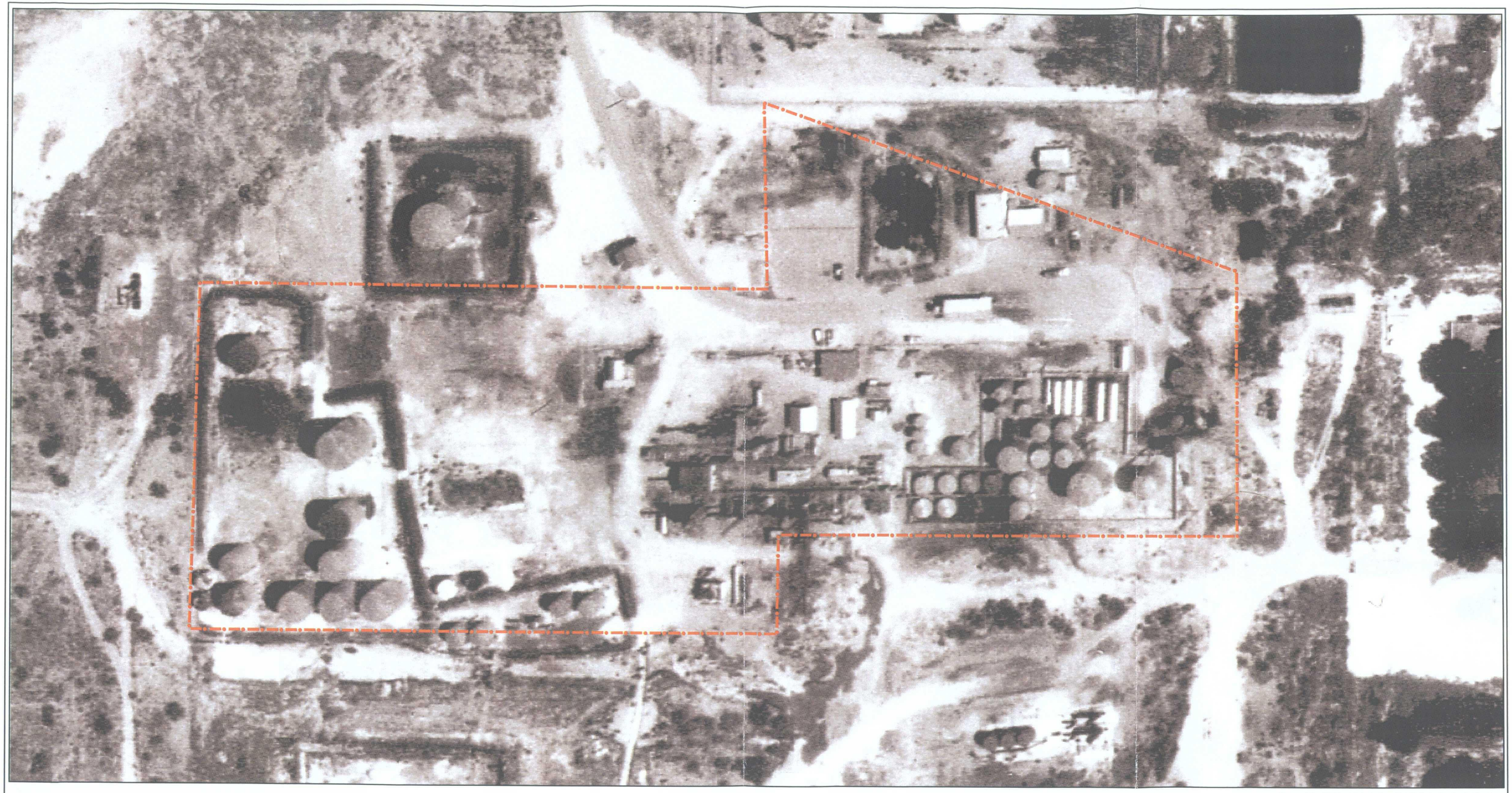
Property Boundary

Figure 4
1966 Aerial Photograph

Enersource Site – Monument, NM

INTERA

T:\Projects\OCD - Enersource Facility\graphics\Monument NM\GIS\ES-fig_4.mxd 05-09-07



Source(s): 1978 aerial photo – Earth Data Analysis Center.

N
S
0 50 100 200
Feet

Legend
Property Boundary

Figure 5
1978 Aerial Photograph

Enersource Site – Monument, NM

INTERA

T:\Projects\OCD - Enersource Facility\graphics\Monument NM\GIS\ES_fig_5.mxd 05-09-07

Source(s): 2005 Aerial photograph – MapTech.

N

S

0 50 100 200 Feet

Legend

Property Boundary

AST Location

INTERA

Figure 6
Geophysical Survey

Enersource Site – Monument, NM

T:\Projects\OCD - Enersource Facility\graphics\Monument NM\GIS\ES-fig_6.mxd 05-09-07

Gate
(locked)

 # 7 – 3.25' bgs
DRO: ND
MRO: ND
Cl: 4.7

 # 1 – 3.25' bgs
DRO: **9,400**
MRO: 6,000
Cl: 25

 # 3 – 3.25' bgs
DRO: **3,600**
MRO: ND
Cl: **560**

Mobile Home Trailer

 # 6 – 3.5' bgs
DRO: **2,900**
MRO: ND
Cl: 97

Vessel

Heat
Exchanger

Miscellaneous
Debris

 # 4 – 3.25' bgs
DRO: ND
MRO: ND
Cl: 140

 # 2 – 3.25' bgs
DRO: ND
MRO: ND
Cl: **570**

 # 5 – 3.25' bgs
DRO: ND
MRO: ND
Cl: 140

Pit

Source(s): 2005 aerial photo – MapTech.

N
S
0 50 100 200 Feet

Legend
- Sample Location
- Property Boundary
- Oil Sludge
- Oil Spill
- Barbed Wire Fence
- Cinder Block Fence
- T-1 Tank Location and Reference #

Notes: Results are in mg/Kg
Bold indicates concentrations above NMOCD Action Levels
DRO = Diesel Range Organic
MRO = Motor Oil Range Organic
Cl = Chloride
ND = Not Detected above minimum detection limit

INTERA

Figure 7
Distribution of Contaminants in Soil

Enersource Site – Monument, NM

T:\Projects\OCD - Enersource Facility\graphics\Monument NM\GIS\ES_fig_7.mxd 05-09-07

APPENDIX A
COST ESTIMATE

State of New Mexico
Oil Conservation Division
Phase II Remediation
Enersource Facility
Monument, New Mexico
May 10, 2007

Task 1. Project Planning and Scheduling						
Professional Services	**Contract Line Item**	**Rate**	**Unit**	**# of Units**		**Total**
Principal	0001	125.00	hour	0	$	-
Senior Scientist/Engineer	0002	85.00	hour	20	$	1,700.00
Project Scientist/Engineer	0003	75.00	hour	4	$	300.00
Staff Scientist/Engineer	0004	65.00	hour	16	$	1,040.00
Field Technician II	0005	60.00	hour	0	$	-
Draftsperson II (Figures,)	0007	60.00	hour	16	$	960.00
Clerk	0009	40.00	hour	2	$	80.00
Subcontract Costs (CRI, SLO permitting)		1,500.00	estimate	1	$	1,500.00
Subtotal Professional Labor					**$**	**5,580.00**
SUBTOTAL TASK 1:					**$**	**5,580.00**
NMGRT @ 6.75%					**$**	**383.63**
GRAND TOTAL TASK 1:					**$**	**5,963.63**
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Professional Services - Travel	**Contract Line Item**	**Rate**	**Unit**	**# of Units**		**Total**
Senior Scientist/Engineer	0002	85.00	hour	30	$	2,550.00
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Subtotal Professional Labor					**$**	**6,190.00**
Professional Services	**Contract Line Item**	**Rate**	**Unit**	**# of Units**		**Total**
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Expenses	**Contract Line Item**	**Rate**	**Unit**	**# of Units**		**Total**
Pick-Up Truck (2)	0042	85.00	Day	38	$	3,230.00
Mileage	0060	0.32	mile	4,560	$	1,459.20
Per Diem	0058	95.00	Man-day	41	$	3,895.00
PID	0012	65.00	Day	26	$	1,690.00
Misc. Field Equipment	0061	35.00	Day	26	$	910.00
Subtotal Expenses					**$**	**11,184.20**
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Analytical Chemistry		26,000.00	Lump sum	0	$	-
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Subtotal Professional Labor					**$**	**9,630.00**
SUBTOTAL TASK 5:					**$**	**9,630.00**
NMGRT @ 6.75%					**$**	**650.03**
GRAND TOTAL TASK 5:					**$**	**10,280.03**
Task 1 Total:					**$**	**5,580.00**
Task 2 Total					**$**	**185,165.20**
Task 3 Total					**$**	**9,630.00**
Project Subtotal					**$**	**200,375.20**
NMGRT = New Mexico Gross Receipts Tax (6.875%)					**$**	**13,775.80**
PROJECT GRAND TOTAL:					**$**	**214,151.00**

Notes:
NMGRT = New Mexico Gross Receipts Tax

APPENDIX B
GEOPHYSICAL SURVEY

SUNBELT GEOPHYSICS P.O. Box 36404 Albuquerque, New Mexico 87176 (505) 922-1140

Geophysical Survey for Buried Metal
Enersource Site, Monument, New Mexico

Prepared for:

INTERA Incorporated
6000 Uptown Blvd NE
Suite 100
Albuquerque, NM 87110

David A. Hyndman

May 2007

Introduction

A geophysical survey has been conducted at the Enersource Site in Monument, New Mexico. The objective of this survey was to map buried materials remaining from past land use. These materials were suspected to include relic piping and subsurface deposits of demolition waste. This Site covers approximately 9 acres, is generally flat and reasonably clear of surface obstructions.

The field work for the geophysical investigation was conducted 10 – 12 April, 2007. Labor, instrumentation, and technical expertise for the survey were provided by Sunbelt Geophysics of Albuquerque. Guidance and coordination were provided by INTERA Incorporated of Albuquerque. Site preparation was provided by Controlled Recovery, Inc. of Hobbs.

Methodology

A spatial control and data acquisition grid was established utilizing a transit and tape. The grid was oriented parallel to the previously marked boundary along the western edge of the Site and bottomed on the previously marked southern boundary.

The grid was offset 25 feet to the east to avoid heavy vegetation and piles of debris along the western boundary fence. The grid was marked by wooden stakes and small dots of spray paint and established parallel north – south data acquisition traverses.

GPS coordinates were obtained at the eastern and western corners of the grid:

	(UTM Zone 13, WGS84)
• 0E, 0N	658208E, 3608953N
• 0E, 427N	658202E, 3609084N
• 1050E, 100N	658528E, 3609991N
• 1050E, 450N	658523E, 3609096N

The survey was conducted using a Geonics EM-61 metal locator. The EM-61 is a time domain electromagnetic instrument capable of detecting concentrations of buried metal to a depth of approximately 10 ft. EM-61 data were acquired every 0.65 ft along the parallel traverses separated by 5 ft.

Data from the EM-61 were transferred to a computer for analysis and mapping. The DAT61 (Geonics Ltd.) and the Oasis montaj (Geosoft Ltd.) programs were used for processing and image preparation.

Results

An image of the strong or high magnitude EM-61 response, indicative of significant concentrations of buried metal, is presented in Figure 1. Several features are annotated:

- A large buried pipe traverses the northwest corner of the Site. This pipe is marked by surface signs designating it as a "Petroleum Pipeline".

- Several concentrations of buried metal are found between 200E and 300E. A large metal tank is exposed just below the surface at 270E, 100N. There appear to be an additional four trenches containing buried waste. These have dimensions of approximately 90 ft by 60 ft. The depth of cover over the waste is annotated.

- The area between 500E, 0N to 750E, 250N contains several concrete pads and/or foundations that provide some but not all of the EM-61 response. Contributions from buried pipes are present as discussed below. A steel pipe is exposed at the surface crossing a corner of the survey.

- A shallow concrete basin is located at 825E, 350N. Several pipes cut flush with the surface are seen in the basin.

- An unidentified object is found at 1000E, 300N and is marked "?".

The EM-61 data are re-projected at higher resolution in Figure 2. The color contours are presented on a logarithmic scale to enhance low magnitude features (buried pipes) while retaining the larger features seen in Figure 1. Observations include:

- Buried pipes are found essentially across the entire site. The lateral runs of buried pipes combine to over one mile in total length. The approximate depths of several pipes are annotated, ranging from just below the surface to approximately 4.5 ft.

- Buried pipes associated with the Enersource Site penetrate the north, south, and east edges of the survey.

- There appears to be considerable interconnection by buried pipes between the concrete pads in the area 500E, 0N to 750E, 250N.

- Another concentration of buried pipes is found immediately south of the concrete basin.

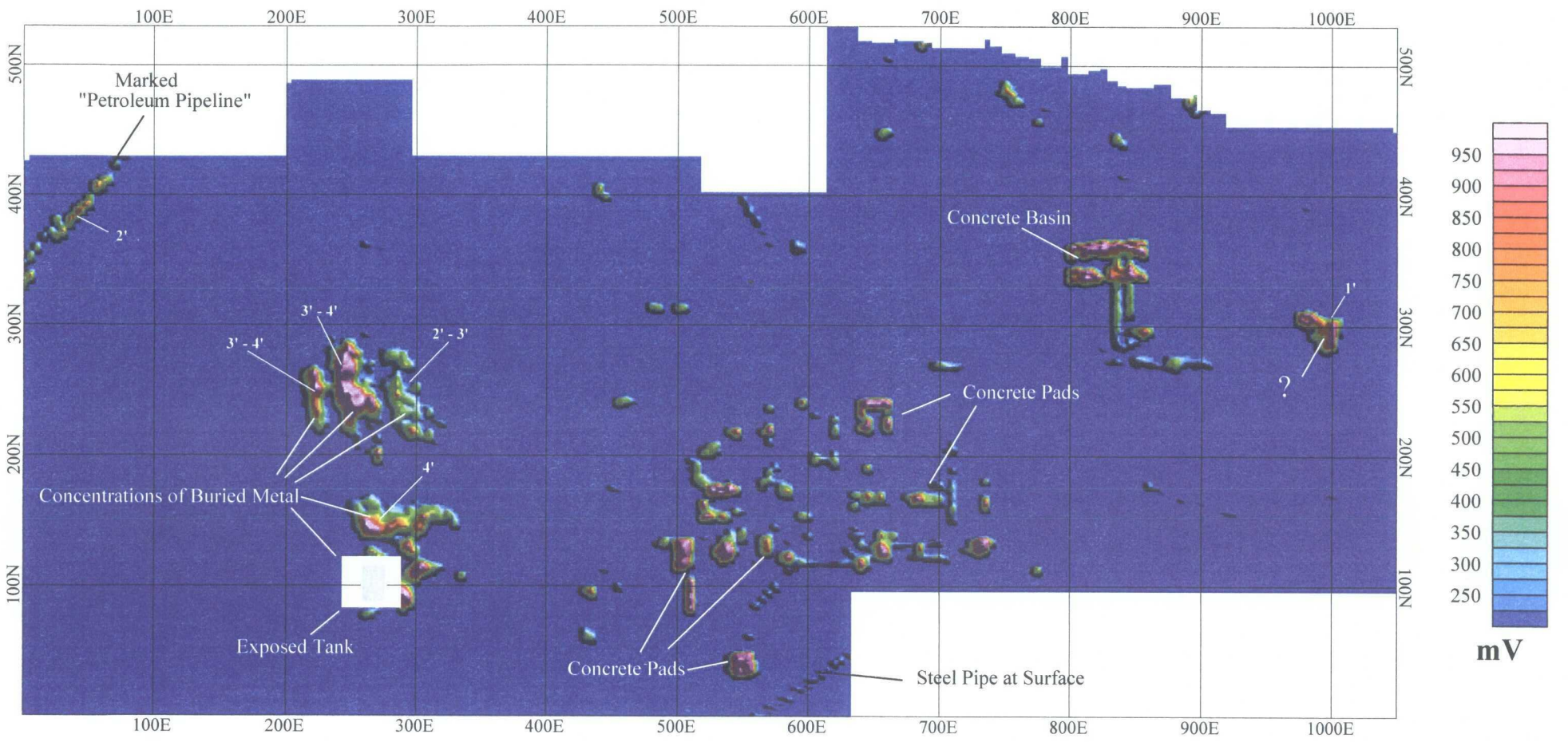
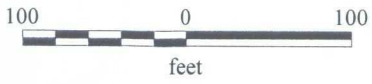
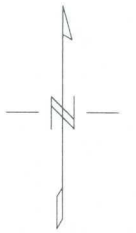
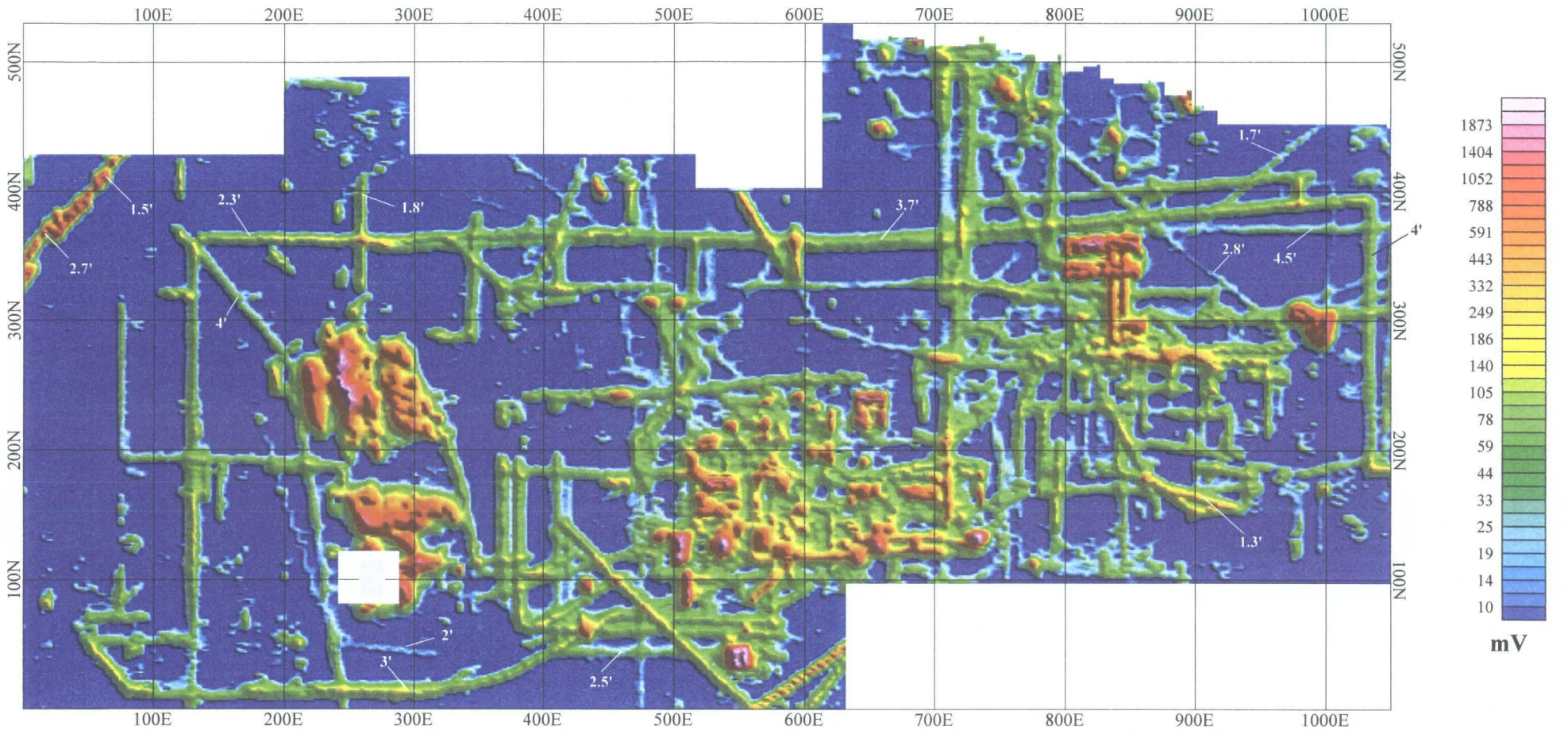


Figure 1. Enersource Site - Monument, New Mexico

Strong EM-61 Response (Major Concentrations of Metal)







2.8' = depth of burial

Figure 2. Enersource Site - Monument, New Mexico

Higher Resolution EM-61 Response

100 0 100

feet

Conclusions

The geophysical survey at the Enersource Site has revealed several significant subsurface features:

- There are five significant major concentrations of buried demolition waste including the previously exposed buried tank.

- Buried pipes are found essentially across the entire site, and extend off-site to the north, south, and east. The depth of burial varies from just below the surface to approximately 4.5 ft.

- There is a concentration of buried pipes and fixtures from 500E, 100N to 700E, 250N, in the vicinity of several concrete pads.

- A second concentration of pipes and fixtures is located from 750E, 200N to 950E, 325N, immediately south of the concrete basin.

APPENDIX A
COST ESTIMATE

State of New Mexico
Oil Conservation Division
Phase II Remediation
Enersource Facility
Monument, New Mexico
May 10, 2007

Task 1. Project Planning and Scheduling						
Professional Services	**Contract Line Item**	**Rate**	**Unit**	**# of Units**		**Total**
Principal	0001	125.00	hour	0	$	-
Senior Scientist/Engineer	0002	85.00	hour	20	$	1,700.00
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Subtotal Professional Labor					**$**	**5,580.00**
SUBTOTAL TASK 1:					**$**	**5,580.00**
NMGRT @ 6.75%					**$**	**383.63**
GRAND TOTAL TASK 1:					**$**	**5,963.63**
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Professional Services - Travel	**Contract Line Item**	**Rate**	**Unit**	**# of Units**		**Total**
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APPENDIX B
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SUNBELT GEOPHYSICS P.O. Box 36404 Albuquerque, New Mexico 87176 (505) 922-1140

Geophysical Survey for Buried Metal
Enersource Site, Monument, New Mexico

Prepared for:

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6000 Uptown Blvd NE
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Albuquerque, NM 87110

David A. Hyndman

May 2007

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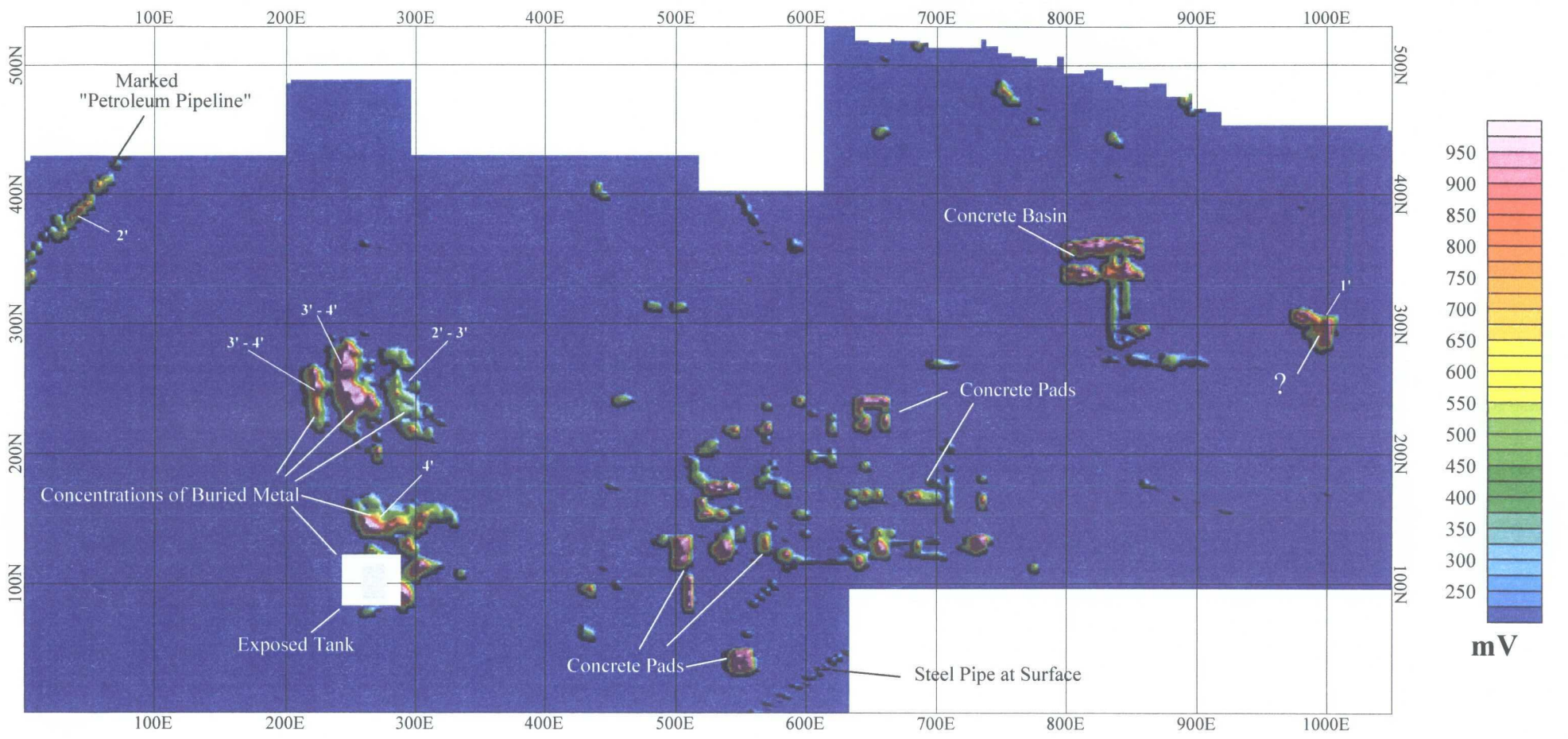

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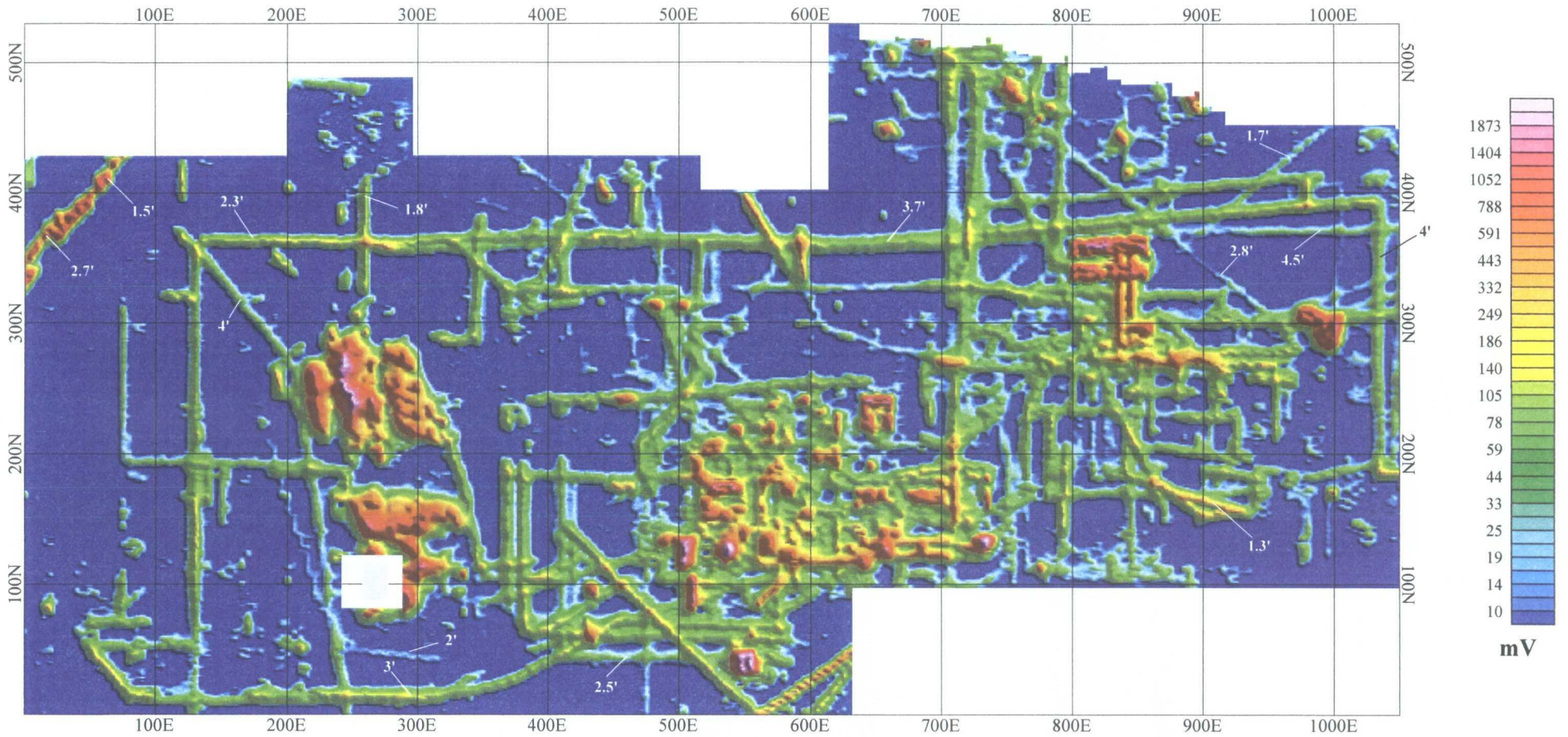

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Higher Resolution EM-61 Response

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feet

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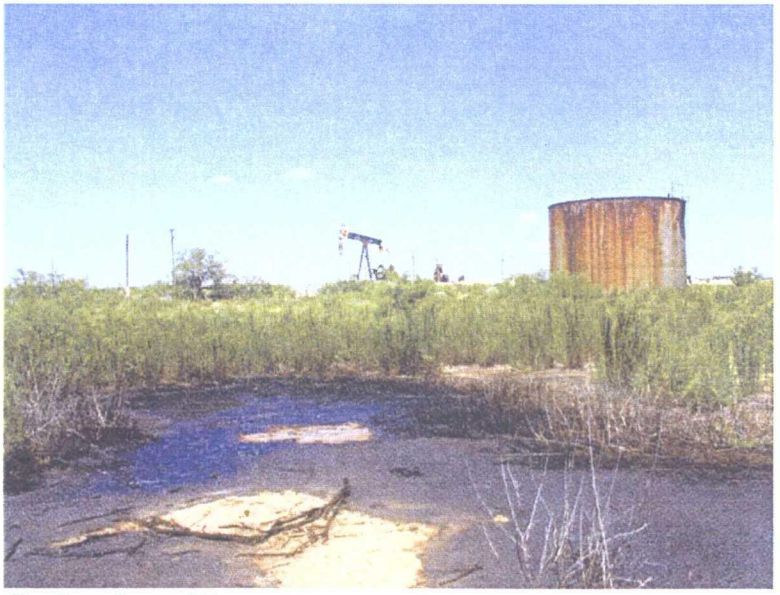
DRAFT

WORK PLAN for PHASE II REMEDIATION

Former Enersource Facility, Monument, New Mexico



Submitted to:

State of New Mexico Energy, Minerals & Natural Resources Department
New Mexico Oil Conservation Division

Submitted by:

INTERA Incorporated
6000 Uptown Blvd. NE, Suite 100
Albuquerque, New Mexico 87110

May 10, 2007

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FIGURES

APPENDICES

1. INTRODUCTION

This work plan, which includes a scope of work (SOW) and cost estimate, is being submitted for the removal of buried metal pipe/debris at the former Enersource facility (Site) in Monument, Lea County, New Mexico. A project location map is provided in Figure 1.

This work plan was prepared in response to a verbal request from Mr. Ben Stone of the New Mexico Oil Conservation Division (NMOCD) to Joseph Tracy and Joe A. Galemore of INTERA Inc. (INTERA) on December 27, 2006. Work is being authorized by purchase order #s 52100-4048 dated February 12, 2007 and 52100-4634 dated March 14, 2007. The cost estimate provide in Appendix A is based on State of New Mexico, General Services Department, Pricing Agreement # 61-805-09-18553 dated June 29, 2006.

2. SITE DESCRIPTION AND PROJECT BACKGROUND

The Site covers 9.56 acres and is located in the northwest quarter of Section 1, Township 20 South, Range 36 East, Lea County, New Mexico (Figure 1). The Site is at an elevation of approximately 3,580 feet above mean sea level. The surface in the vicinity slopes down from northwest to southeast at a gradient of approximately 0.003 feet/foot (16 feet/mile). Monument Draw, a northwest to southeast flowing intermittent stream is located about 2-1/2 miles south of the Site.

Land in the area is used for oil and gas exploration/production and cattle ranching. The Versado Gas Processing Plant (remediation permit # 1R-281) is located immediately adjacent to the northern property boundary. El Paso Natural Gas operates a facility within 500 feet of the eastern property boundary. Numerous oil/gas wells, pump jacks, and storage tanks are in the vicinity. The estimated property boundary and the fenced area believed to have been used by Enersouce operations are illustrated on Figure 2.

INTERA contacted Mr. Cal Wrangham of Targa Resources, Inc concerning investigations and remediation at the adjacent Versado Plant. Mr. Wrangham informed INTERA that ground water flow to the south, southeast and the depth to water ranges from about 25 to 35 feet below ground surface. The estimated locations of water wells in the area as determined by searching the New Mexico Office of the State Engineer WATERS database are illustrated on Figure 1. The closest well is a domestic supply well located approximately 2,000 feet north of the Site; no information concerning depth to water was provided in the WATERS database. The next closest well is also a domestic supply well located about 3,000 feet east of the Site. The WATERS database lists the depth to water in this well as 40 feet bgs.

Based on historical aerial photographs taken in 1949, 1966, and 1978 (see Figures 3 through 5), it appears that major development at the Site occurred after 1949. The aerial photograph taken in 1949 (Figure 3) reveals one large tank that straddles the Site boundary, but, with the exception of some roads, the remainder of the Site is undeveloped. The 1966 (Figure 4) and 1978 photographs (Figure 5) show numerous (> 25) above ground tanks located within or slightly

outside the property boundary. The tanks are arranged into an eastern and a western cluster. The tank sizes within the western cluster are, in general, larger than the tanks in the eastern cluster. The two clusters of tanks are separated by a central area that contains buildings and, based on the shape of the shadows, tall narrow structures. Mr. Larry Parker, a long time resident of Lea County, stated that the Site was used as a jet fuel refinery during this time period. Therefore, these tall, narrow structures formerly located in the central part of the Site may be cracking or distillation towers. Given the larger tank sizes, the western part of the property was probably used for crude storage; and the eastern cluster was used for product storage. A tractor trailer truck can be seen in the 1978 aerial photograph (Figure 5) just north of the central processing area; this area may have been used for product loading.

It is unknown how long refinery operations occurred at the Site. Based on information obtained from the Lea County Tax Assessor, Enersource became the property owner in 1985. Our understanding is that Enersource used the facility to reclaim crude oil until sometime prior to 2006 when INTERA was contracted by OCD. Mr. Parker stated that the structures formerly located in the central part of the Site were dismantled and sold for scrap. The structures and materials that were not sold were buried in the west-central portion of the Site. It is unknown when this occurred.

INTERA was contracted in 2006 to test the existing ASTs and fluids/sludge for naturally occurring radioactive materials (NORM) and subsequently remove these materials from the Site. The tanks illustrated in Figure 2 and some underground piping were removed from the Site and disposed of at an off-Site facility in the summer of 2006. During the removal action, soil samples were collected at eight (8) locations from a depth of 3.25 feet below ground surface across the site and the samples were analyzed for total petroleum hydrocarbons (TPH), diesel range and motor oil range organics (DRO and MRO), and chlorides. Locations of tanks, samples, and analysis results are illustrated on Figure 2.

On April 10, 11, and 12, 2007, a geophysical survey was performed with the purpose of identifying buried, metal objects at the Site. The survey revealed the presence of several thousand feet of underground piping and large metal objects scattered throughout the Site. A map illustrating the approximate locations of buried pipes and buried metal objects are illustrated on Figure 6. The refinery materials reportedly buried on Site may be located between 200E to 300 E and 100N to 300N on Figure 6. A copy of the geophysical report prepared by Sunbelt Geophysics is included in Appendix B.

3. REMEDIATION ACTION LEVELS and EXTENT OF CONTAMINATION

Action levels for soil at the Site were provided by Mr. Glenn VonGotten of OCD and are as follows:

- Benzene — 0.2 milligrams (mg)/Kilogram (kg)
- BTEX — 50 mg/kg

- TPH (GRO [C6-C10]) and DRO [C10 – C28]) by 8015 — 500 mg/kg
- TPH by 418.1 — 2500 mg/kg
- Chlorides (300.1): — 500 mg/kg to 6' BGS and
- Chlorides (300.1) — 1000 mg/kg below 6' BGS.

As indicated on Figure 7, three areas of petroleum impacted soils were discovered during Phase I activities. The northern portion of the site is an area that was apparently used by Enersource, and the former refinery for loading and unloading product and may have contained a disposal pit (See Figure 4). Sample # 1, which was collected in this area, contained 15,400 mg/kg TPH (DRO [C10 to C 28] and MRO [C 28 – C36]), the highest concentration of TPH contained within the soil samples tested. The western portion of the site is in an area that contained numerous ASTs, a disposal pit, and miscellaneous debris. This area is believed to have been used for crude storage. Three soil samples were collected in this area. Two of the samples (# 5 and # 8) did not contain TPH at concentrations above the laboratory practical quatification limit (PQL); however, sample # 6 contained TPH (DRO) at a concentration of 2,900 mg/kg. The eastern portion of the Site includes an area containing numerous ASTs that were believed to have been used for product storage. Three soil samples were collected from this area, but only one contained TPH above action limits. Soil sample # 3 contained TPH (DRO) at a concentration of 3,600 mg/kg. Relative to the other areas, chloride concentrations were high in the area # 3. Chloride concentration in samples # 2 and 3 were greater than 500 mg/kg; whereas, the highest concentration of chloride in other soil samples was 220 mg/kg in sample # 8 taken from area 2.

4. SCOPE OF WORK

INTERA has divided the project SOW into the following three (3) tasks:

- Task 1 – Project Planning and Scheduling;
- Task 2 – Buried pipe/debris removal; and
- Task 3 – Reporting.

4.1 Task 1: Project Planning and Scheduling

This task includes project planning and scheduling activities and includes the development of this work plan. Other project planning and scheduling activities include (1) setup of project files (electronic and hard copy), (2) revision of the site specific health and safety plan and compilation of appropriate INTERA standard operating procedures, (3) subcontracting of buried pipe/debris removal, (4) right of entry permitting with New Mexico State Land Office and (5) scheduling of field activities. Once the schedule is developed and prior to mobilization to the field, INTERA will perform a New Mexico-required "One-Call" to identify the approximate locations of documented underground utilities at the Site.

4.2 Task 2:Buried Pipe/Debris Removal

Task 2 will include the removal of buried metal pipe and debris identified in the geophysical survey. Once removed, the piping will be stockpiled on site, surveyed for NORM, and recycled or disposed of off-site. Trenches will be backfilled with the soils excavated during pipe/debris

removal. In the event liquids are encountered in the lines, the liquids will first be drained into the trench containing the piping and then immediately pumped into a DOT approved 55-gallon drum. Assumptions of this task include:

- NORM values for the tested materials will be below the action limit of 50 microroentgens per hour above background levels;
- Eighteen loads of metal will be taken to the recycler;
- Three loads (60 cubic yards) of debris will be taken to the landfill; and
- Five loads (50 barrels) of liquids will be transported and disposed of at CRI's liquid waste disposal facility.

We plan to start this task the week of May 14, 2007 and twenty-six days have been budgeted to complete this task. It should be noted, however, that there is considerable uncertainty in the amount of pipe/debris at the Site and the degree of difficulty in excavating these materials. Consequently, the estimated time to complete this subtask is also uncertain.

4.3 Task 3: Reporting

Upon the culmination of task 2, INTERA will complete a report documenting results of Phase I and Phase II activities. The report will include at a minimum:

- A site map showing buried pipelines, electrical hazards, Site boundaries, and sampling locations;
- NORM survey results;
- The volume of material removed from the tanks, disposal/reclamation company used and the volume of recoverable hydrocarbons retrieved;
- Tank reclamation or scrap iron facility used;
- Volume/weight of miscellaneous debris removed and the disposal/recycling company used;
- Results of analytical data gathered;
- Boring logs and field screening results;
- Geophysical report
- A map/cross section showing the locations, depths, and concentrations of total petroleum hydrocarbons in soil contamination areas;
- Photographic documentation of Phase I and II activities;
- Estimates of the volume and cost to remove all material determined to be contaminated based on the Phase II investigation. An estimate for the cost of placing clean fill in the excavated areas will also be generated. INTERA will follow the NMOCD suggestion to transport clean fill from a landfarm location to help decrease transportation charges; and
- Estimates of the volume and cost to excavate and construct compost piles on site. The contaminated material should be mixed at a 4:1 ratio with manure and enough water to keep the piles moist, per the NMOCD request. The piles are to be turned every four weeks for at least four turning events. Estimates will include costs to backfill and compact the excavations and contour the Site with the remediated compost material.

5. SCHEDULE

INTERA will begin work the week of May 14, 2007. We understand that the work needs to be completed and billed by June 30, 2007.

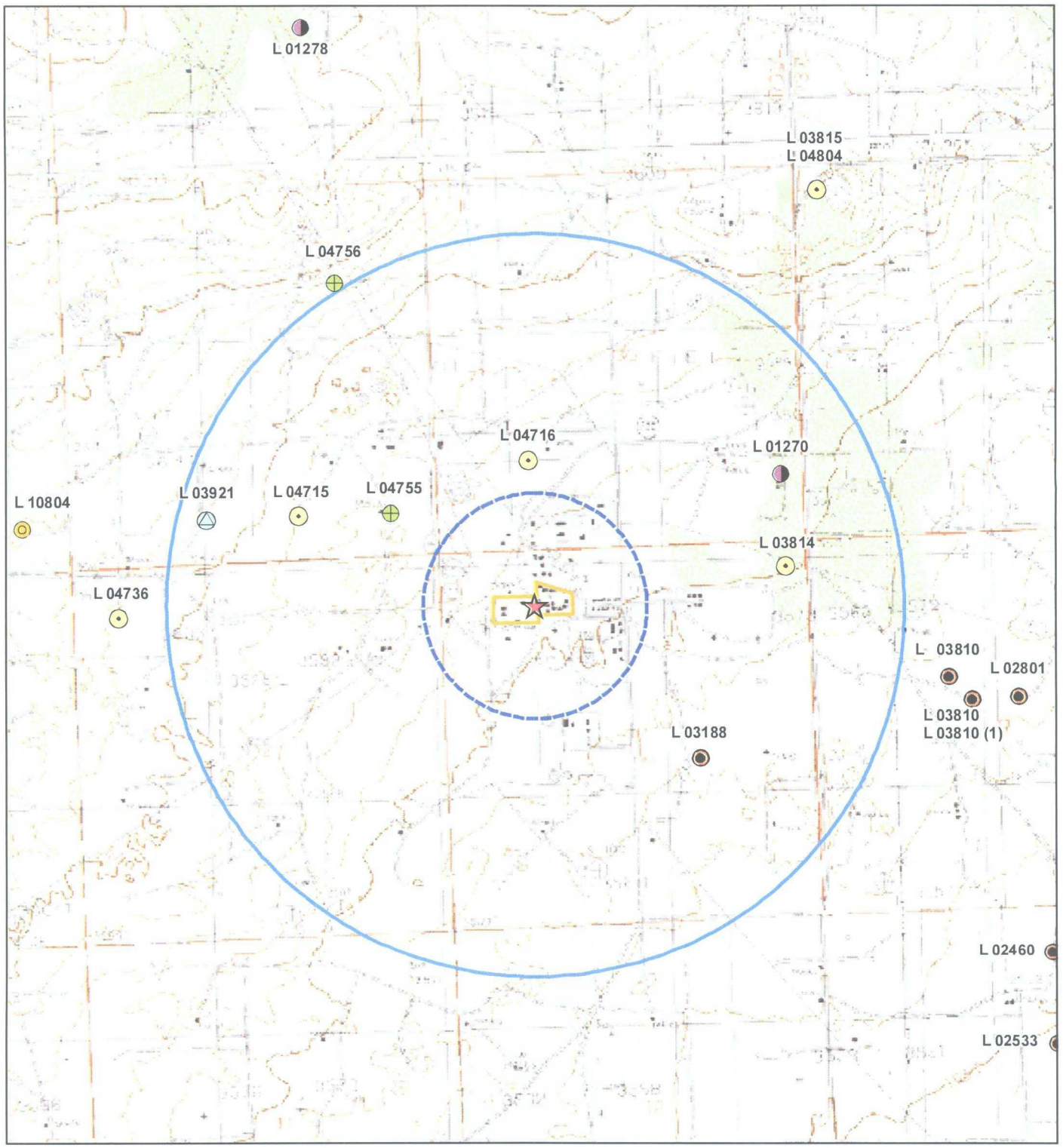
6. COST ESTIMATE

The cost estimate to provide the services described above is provided in Appendix A. INTERA's services will be provided on time and material price basis. INTERA will not exceed these costs without first requesting and then obtaining approval for an amendment to this budget.

7. PERSONNEL

The key personnel who will be responsible for completion of the project are listed below along with their areas of responsibility.

Ms. Cindy Ardito, Principal	Ms Ardito will be briefed on project activities and will review deliverables. She will be responsible for INTERA resource allocation.
Mr. Joe A. Galemore, Senior Project Manager	Mr. Galemore will provide Client interface, project management, and development of work plan and report documents.
Mr. Joseph J. Tracy, PG – Project Geologist	Mr. Tracy will serve as project advisor. Mr. Tracy has been involved with this project from its inception and will be consulted and briefed on all aspects of this phase of work.
Mr. Joe Hillar, – Staff Scientist	Mr. Hiller will oversee pipe removal and will assist in report preparation.
Mr. Konrad Clark – Field Technician II	Mr. Clark was on site during the performance of Phase I activities so will be consulted concerning Phase I results. Mr. Clark will also assist in final report development.



USGS 7.5 Minute Topographic Map: Monument North, Monument South Quadrangles, 1985, Contour Interval 5 Feet
Site Location: NW¼ Sec. 1; T20S; R36E

Source(s): Top map – MapTech

0 1,000 2,000 4,000 Feet

N

S

Legend

- Property Boundary
- 1,000 Foot Radius
- 1 Mile Radius
- WATERS Database Well Location
  - DOM - Domestic
  - PRO - Prospecting/Dev. of Natural Resources)
  - EXP - Exploration
  - MUL - Multiple Domestic
  - POL - Polution Control
  - STK - Livestock Watering

INTERA

Figure 1
Project Location Map
with Vicinity Wells

Enersource Site – Monument, NM

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Source(s): 2005 aerial photo – MapTech.

N

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0 50 100 200 Feet

Legend

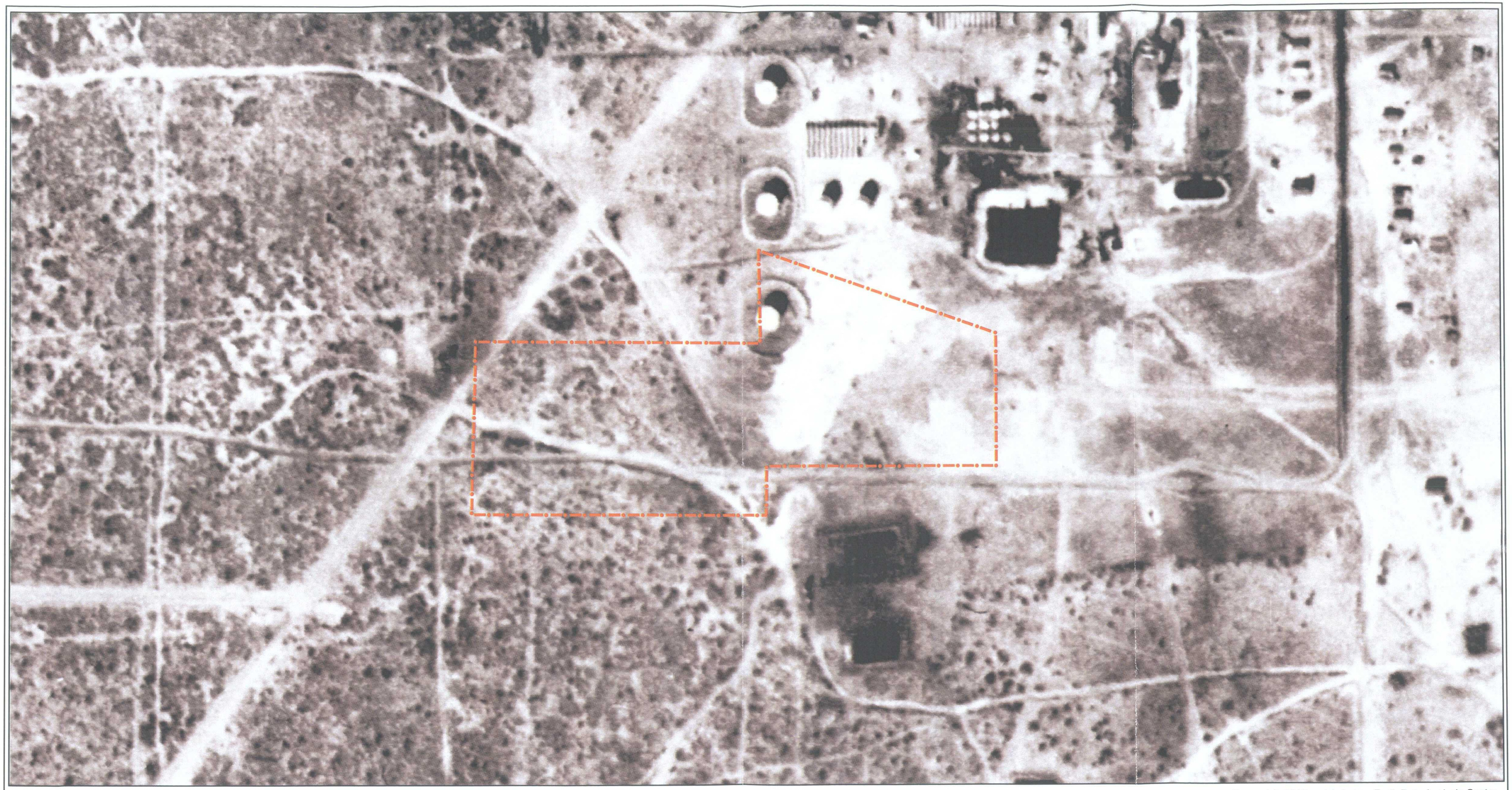
- Property Boundary
- Barbed Wire Fence
- Cinder Block Fence

Figure 2
Site Plan – 2005 Aerial Photograph

Enersource Site – Monument, NM

INTERA

T:\Projects\OCD - Enersource Facility\graphics\Monument NM\GIS\ES-fig_2.mxd 05-09-07



Source(s): 1949 aerial photo – Earth Data Analysis Center.

N

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0 100 200 400

Feet

Legend

Property Boundary

Figure 3
1949 Aerial Photograph

Enersource Site – Monument, NM

INTERA

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Source(s): Aerial photo – Earth Data Analysis Center

N

S

0 100 200 400 Feet

Legend

Property Boundary

INTERA

Figure 4
1966 Aerial Photograph

Enersource Site – Monument, NM

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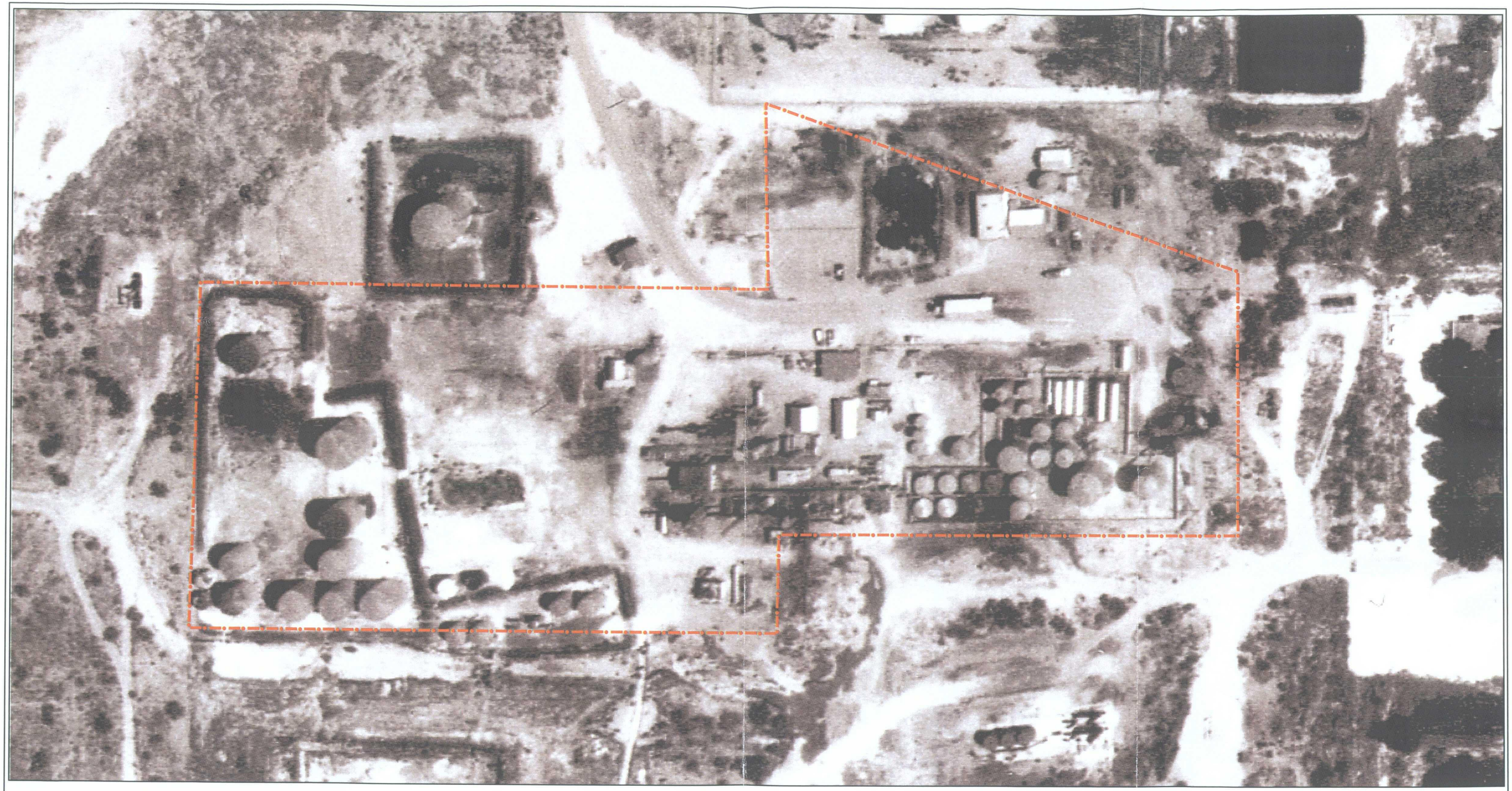

Source(s): 1978 aerial photo – Earth Data Analysis Center.

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0 50 100 200 Feet

Legend

Property Boundary

INTERA

Figure 5
1978 Aerial Photograph

Enersource Site – Monument, NM

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Source(s): 2005 Aerial photograph – MapTech.

N

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0 50 100 200 Feet

Legend

Property Boundary

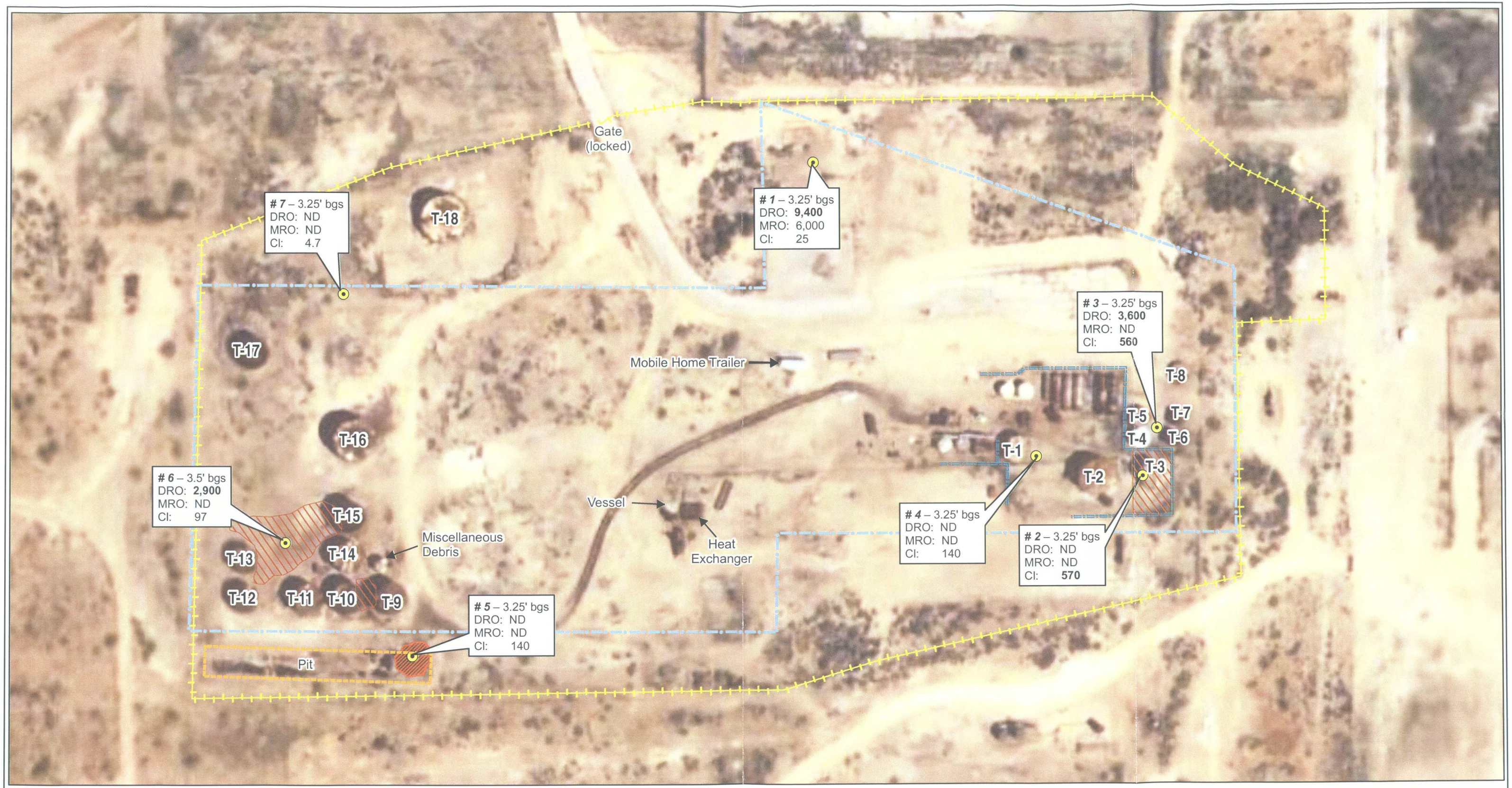
AST Location

Figure 6
Geophysical Survey

Enersource Site – Monument, NM

INTERA

T:\Projects\OCD - Enersource Facility\graphics\Monument NM\GIS\ES-fig_6.mxd 05-09-07



Source(s): 2005 aerial photo – MapTech.

N
S
0 50 100 200 Feet

Legend

- Sample Location
- Property Boundary
- Oil Sludge
- Oil Spill
- Barbed Wire Fence
- Cinder Block Fence
- T-1 Tank Location and Reference #

Notes: Results are in mg/Kg
Bold indicates concentrations above NMOCD Action Levels
DRO = Diesel Range Organic
MRO = Motor Oil Range Organic
Cl = Chloride
ND = Not Detected above minimum detection limit

Figure 7
Distribution of Contaminants in Soil

Enersource Site – Monument, NM

INTERA

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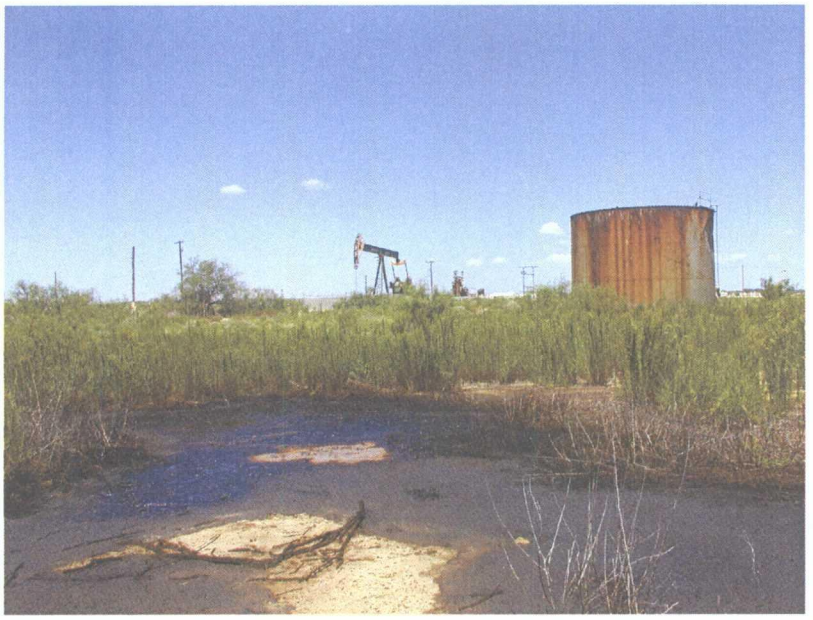
DRAFT Scope of Work and Cost Estimate

PHASE II INVESTIGATION

Former Enersource Facility, Monument, New Mexico



Submitted to:

State of New Mexico Energy, Minerals & Natural Resources Department
New Mexico Oil Conservation Division

Submitted by:

INTERA Incorporated
6000 Uptown Blvd. NE, Suite 100
Albuquerque, New Mexico 87110

February 2007

TABLE OF CONTENTS

1. INTRODUCTION

This scope of work (SOW) and cost estimate are being submitted for a Phase II investigation at the former Enersource facility (Site) in Monument, Lea County, New Mexico. Phase I of the project occurred in the Summer of 2006 and included the removal of fluids, sludge, and above ground storage tanks (ASTs) as well as limited sampling and analysis of soil. The purpose of Phase II investigation activities is to identify additional potential sources of contamination and determine the horizontal and vertical extent of contamination within the area formerly used by Enersource (Site) (DISCUSS PROPERTY BOUNDARY ISSUE). The investigation will include the performance of a geophysical survey, removal of buried pipes, collection of numerous soil samples, field screening for the presence of volatile organic compounds (VOCs), and subsequent laboratory analysis of select samples for BTEX and TPH. The data collected will be use to scope the excavation of petroleum impacted soils.

This submittal is in response to a verbal request from Mr. Ben Stone of the New Mexico Oil Conservation Division (NMOCD) to Joseph Tracy and Joe A. Galemore of INTERA Inc. (INTERA) on December 27, 2006. Work is being authorized by purchase order # 52100-0000004048 dated February 12, 2007. The cost estimate provide in Appendix A is based on State of New Mexico, General Services Department, Pricing Agreement # 61-805-09-18553 dated June 29, 2006.

2. SITE DESCRIPTION AND PROJECT BACKGROUND

The Site covers 9.56 acres and is located in the northwest quarter of Section 1, Township 20 South, Range 36 East, Lea County, New Mexico (Figure 1). The property is currently owned by NMOCD but was previously owned and operated by Enersource, Inc. as an oil recovery facility. Enersource operated the facility from ____ to _____. The estimated property boundary and the fenced area believed to have been used by Enersouce operations are illustrated on Figures 2 and 3. Figure 2 is a 2005 aerial photo that was taken prior to Phase I project activities. Figure 3 is a 1978 aerial photograph showing locations of ASTs and other structures assumed to have been used for oil recovery operations. Notice that some of the ASTs and pits assumed to have been used by Enersource are located outside the property boundary. For this proposal, the Site refers to the larger fenced area. Access to the portion of the site not owned by NMOCD will need to be obtained.

ASTs and fluids/sludge were tested for naturally occurring radioactive materials (NORM) and removed from the Site and disposed of at an off site facility in the summer of 2006 by INTERA. During the removal action, soil samples were collected at eight (8) locations from a depth of 3.25 feet below ground surface across the site and the samples were analyzed for total petroleum hydrocarbons (TPH), diesel range and motor oil range organics (DRO and MRO), and chlorides. Locations of tanks, samples, and analysis results are illustrated on Figure 2.

Depth to ground water at the Site is estimated to be between 25 and 50 feet below ground surface (Leadshill-Herkenhoff et al, 2000). Conversations with NMOCD personnel indicate that the depth to water may be as shallow as 20 feet bgs. Ground water flow direction is reportedly to the south, southeast (Leadshill-Herkenhoff et al, 2000). The estimated locations of water wells in the area as determined by searching the New Mexico Office of the State Engineer WATERS database are illustrated on Figure 1 (REFERENCE). The closest well is a domestic supply well located approximately 2,000 feet north of the Site; no information concerning depth to water was provided in the WATERS database. The next closest well is also a domestic supply well located about 3,000 feet east of the Site. The WATERS database lists the depth to water in this well as 40 feet bgs. Monument Draw, a northwest to southeast flowing intermittent stream is located about 2-1/2 miles south of the Site.

NMOCD remediation action levels for the Site were calculated using the scoring system detailed within the *Guidelines for Remediation for Leaks, Spills, and Releases* (NMOCD, 1993). Applying this scoring system and Site specific criteria of (1) the depth to water is < 50 feet bgs, (2) water supply wells are greater than 200 feet from the Site, and (3) no surface water bodies are located within 1,000 horizontal feet, results in a Site total ranking score of > 19; therefore, the recommended action levels are:

- Benzene 10 milligrams (mg)/Kilogram (kg)
- BTEX 50 mg/kg
- TPH 100 mg/kg

As indicated on Figures 2 and 3, three areas of petroleum impacted soils exist at the Site. Area 1 is in the northern portion of the site in an area apparently used by Enersource for loading and unloading of crude oil. Sample # 1, which was collected in Area 1, contained 15,400 mg/kg TPH (DRO and MRO), the highest concentration of TPH contained within the 8 total soil samples tested. Area 2 is in the southwestern portion of the site in an area that contained numerous ASTs, a disposal pit, and miscellaneous debris. Three soil samples were collected in this area. Two of the samples (# 5 and # 8) did not contain TPH at concentrations above the laboratory practical quatification limit (PQL); however, sample # 6 contained TPH (DRO) at a concentration of 2,900 mg/kg. Area 3 is located on the east side of the Site and includes an area containing numerous ASTs. Three soil samples were collected from this area, but only one contained TPH above action limits. Soil sample # 3 contained TPH (DRO) at a concentration of 3,600 mg/kg. Relative to the other areas, chloride concentrations were high in area # 3. Chloride concentration in samples # 2 and 3 were greater than 500 mg/kg; whereas, the highest concentration of chloride in other soil samples was 220 mg/kg in sample # 8 taken from area 2.

3. SCOPE OF WORK

INTERA has divided the project SOW into the following three (3) tasks:

- Task 1 – Project Planning and Scheduling
- Task 2 – Field Activities
- Task 3 – Reporting

3.1 Task 1: Project Planning and Scheduling

This task includes project planning and scheduling activities and includes the development of this scope of work and cost estimate. Other project planning and scheduling activities that will be completed once NMOCD provides INTERA with authorization to proceed includes (1) setup of project files (electronic and hard copy), (2) development of a work plan including the revision of the site specific health and safety plan and compilation of appropriate INTERA standard operating procedures, (3) subcontracting of geophysical and drilling (analytical chemistry?) services, and (4) scheduling of field activities. Once the schedule is developed and prior to mobilization to the field, INTERA will perform a New Mexico-required "One-Call" to identify the approximate locations of documented underground utilities at the Site. A letter report summarizing task activities will be submitted to NMOCD upon completion of Task 1.

3.2 Task 2: Field Activities

Task 2 will include the following three subtasks:

- Subtask 2.1: Surface geophysical survey
- Subtask 2.2: Buried line removal
- Subtask 2.3: Soil sampling and analysis

Each subtask is described below. A letter report summarizing task activities will be submitted to NMOCD upon completion of each subtask within Task 2.

Subtask 3.1: Surface geophysical survey

Subtask 3.1 will include a surface geophysical survey of the investigation areas identified on Figures 2 and 3. The objective of this subtask is to locate and map underground man-made features such as steel piping, steel tanks, and a gas plant that was allegedly buried at the Site. A Geonics EM61 (or equivalent) will be used to detect steel piping and underground tanks. Ground penetrating radar will be used to delineate the buried gas plant. The geophysical survey will be performed in three days.

Subtask 3.2: Buried line removal

Subtask 3.2 will include the "day lighting" and removal of buried lines identified in Subtask 1. Some of these lines, and associated petroleum impacted soils, were discovered during Phase I of this project. The objective of this subtask is to remove these lines and identify areas containing petroleum stained soils that may require further investigation. Once removed, the piping will be stockpiled on site for later disposal. One day has been budgeted for this subtask

Subtask 3.3: Soil sampling and analysis

Subtask 3.3 will include the advancement of borings and continuously sampling of soil over a 4 day period. We anticipate that approximately 50 soil borings to a depth of approximately 20 ft bgs will be accomplished over the four (4) day period, but, given the uncertainties in drilling conditions and the extent of buried lines and resulting contamination, the proposed number and depth of borings can not be predicted. The borings will be drilled in the three (3) areas identified as potentially containing actionable soil contamination identified in subtask 1. Drilling within each area will commence near the previous sample locations identified on Figure 3. Additional borings will be advanced until the horizontal extent has been determined based on soil staining.

The borings will be drilled until visual staining is not present and other screening method results do not indicate the presence of petroleum impacts. Boring locations will be documented with a recreational-grade GPS unit and will be measured using a measuring tape and/or measuring wheel from Site landmarks. INTERA recommends that quality control/quality assurance (QA/QC) samples (split samples, duplicates, etc.) be collected. The frequency and number of QA/QC samples will be detailed in the work plan.

Drill cuttings not containing obvious soil contamination will be thin spread on site. Drill cuttings containing obvious soil contamination will be place on plastic sheeting and a berm will be constructed around the cuttings to prevent storm water run-on and runoff.

Two samples per boring will be submitted for laboratory analysis. The samples selected for laboratory analysis will include the one collected from the bottom of each boring and one from the depth that appears to contain the highest concentration of petroleum contamination. Selection of the sample containing the highest concentration of petroleum will be based on visual observations and head space results. The samples will be analyzed for BTEX by EPA method 8021B (MAYBE 1 in 10) and TPH (DRO and MRO) by EPA method 8015B. The cost of the testing will be paid directly by NMOCD. PAHs

3.3 Task 3: Reporting

Upon the culmination of the field investigation, INTERA will complete a report documenting results of Phase I and Phase II activities. The report will include at a minimum:

- A site map showing buried pipelines, electrical hazards, Site boundaries, and sampling locations;
- NORM survey results;
- The volume of material removed from the tanks, disposal/reclamation company used and the volume of recoverable hydrocarbons retrieved;
- Tank reclamation or scrap iron facility used;
- Volume/weight of miscellaneous debris removed and the disposal/recycling company used;
- Results of analytical data gathered;
- Boring logs and field screening results;
- Geophysical report
- A map/cross section showing the locations, depths, and concentrations of total petroleum hydrocarbons in soil contamination areas;
- Photographic documentation of Phase I and II activities;
- Estimates of the volume and cost to remove all material determined to be contaminated based on the Phase II investigation. An estimate for the cost of placing clean fill in the excavated areas will also be generated. INTERA will follow the NMOCD suggestion to transport clean fill from a landfarm location to help decrease transportation charges; and
- Estimates of the volume and cost to excavate and construct compost piles on site. The contaminated material should be mixed at a 4:1 ratio with manure and enough water to keep the piles moist, per the NMOCD request. The piles are to be turned every four

weeks for at least four turning events. Estimates will include costs to backfill and compact the excavations and contour the Site with the remediated compost material.

4. SCHEDULE

INTERA will begin scheduling and project coordination as soon as possible after the NMOCD has issued a notice to proceed. The investigation report will be transmitted to the NMOCD within 60 days of completion of the field sampling activities.

5. COST ESTIMATE

The cost estimate to provide the services described above is provided in Attachment A. INTERA's services will be provided on firm, fixed price basis. INTERA will not exceed these costs without first requesting and then obtaining approval for an amendment to this budget. Assumptions used in developing these costs are provided below.

- The NMOCD will grant access to the property (including the property located inside the fence but outside the property boundary, both of which are identified in Figure 2.
- INTERA will complete the field work in two mobilizations. The first mobilization will occur for the geophysical survey. The second mobilization will occur for the buried line removal and soil sampling.
- INTERA will complete the geophysical survey in 3 days; the buried line removal in 1 day; and the soil sampling in 4 days.
- Soil samples will be sent to an NMOCD contract laboratory. Because the contract laboratory will be reimbursed directly through the State of New Mexico, costs for laboratory analyses are not included in the attached estimate. The selected laboratory will provide all sample bottles, coolers, etc. and will be responsible for any cost incurred by INTERA for sample shipping.
- Laboratory analytical data will be forwarded to INTERA within 10 calendar days of submittal of samples to the laboratory.

INTERA will submit invoices for services upon completion of Task 1 and each subtask in Task 2. Terms of payment will be in accordance with INTERA's New Mexico General Services Department Pricing Agreement # 61-805-09-18553.

6. PERSONNEL

The key personnel who will be responsible for completion of the project are listed below along with their areas of responsibility.

Ms. Cindy Ardito, Principal	Ms Ardito will be briefed on project activities and will review deliverables. She will be responsible for INTERA resource allocation.
Mr. Joe A. Galemore, Senior Project Manager	Mr. Galemore will provide Client interface, project management, and development of work plan and report documents.
Mr. Joseph J. Tracy, PG – Project Geologist	Mr. Tracy will serve as project advisor. Mr. Tracy has been involved with this project from its inception and will be consulted and briefed on all aspects of this phase of work.
Mr. Gary Desselle, – Staff Scientist	Mr. Desselle will oversee pipe removal and soil boring/sampling activities and will assist in work plan and report preparation.
Mr. Konrad Clark – Field Technician II	Mr. Clark was on site during the performance of Phase I activities so will be consulted concerning Phase I results. Mr. Clark will also assist in final report development.

7. REFERENCES

Leedshill-Herkenhoff, Inc., John Shomaker & Associates, Inc., and Montgomery and Andrews, P.A. 2006. *Lea County Regional Water Plan.* December 7, 2000.

New Mexico Oil Conservation Division. 1993. *Guidelines for Remediation of Leaks, Spills, and Releases*. August 13, 1993.

Source(s): 2005 aerial – Google Maps.

N
S
0 50 100 200 Feet

Legend

- Sample Location
- Property Boundary
- Oil Sludge
- Oil Spill
- Barbed Wire Fence
- Cinder Block Fence
- 1 Investigation Area and Reference #
- T-1 Tank Location and Reference #

Notes: TPH results are in mg/Kg
DRO = Diesel Range Organic
MRO = Motor Oil Range Organic
Cl = Chloride
ND = Not Detected above minimum detection limit

INTERA

Figure 2
Site Plan

Enersource Site – Monument, NM

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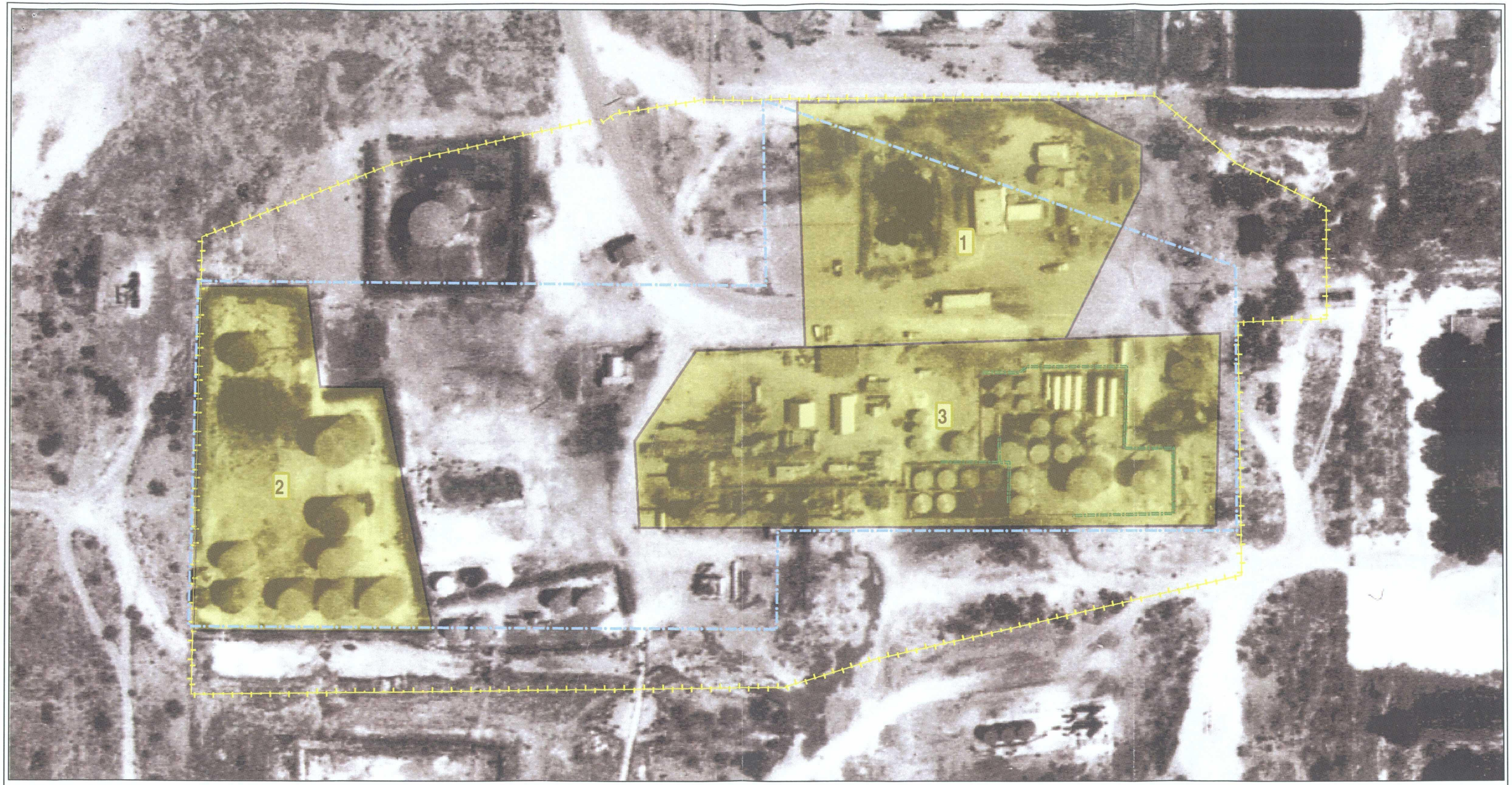

Source(s): 1978 Aerial – Earth Data Analysis Center.

N
S
0 50 100 200
Feet

Legend
- Property Boundary
- Barbed Wire Fence
- Cinder Block Fence
- 1 Investigation Area and Reference #

INTERA

Figure 3
1978 Aerial Photograph

Enersource Site – Monument, NM

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ATTACHEMNT A
COST ESTIMATE

State of New Mexico
Oil Conservation Division
Phase II Investigation
Enersource Facility
Monument, New Mexico
February, 2007

Task 1. Project Planning and Scheduling						
Professional Services	**Contract Line Item**	**Rate**	**Unit**	**# of Units**		**Total**
Principal	0001	125.00	hour	1	$	125.00
Senior Scientist/Engineer	0002	85.00	hour	40	$	3,400.00
Project Scientist/Engineer	0003	75.00	hour	6	$	450.00
Staff Scientist/Engineer	0004	65.00	hour	8	$	520.00
Field Technician II	0005	60.00	hour	4	$	240.00
Draftsperson II (Figures)	0007	60.00	hour	8	$	480.00
Clerk	0009	40.00	hour	2	$	80.00
Subtotal Professional Labor					**$**	**5,295.00**
SUBTOTAL TASK 1:					**$**	**5,295.00**
NMGRT @ 6.875%					**$**	**364.03**
GRAND TOTAL TASK 1:					**$**	**5,659.03**

Task 2. Field Activities							
Professional Services	**Contract Line Item**	**Rate**	**Unit**	**# of Units**		**Total**	
Senior Scientist/Engineer	0002	85.00	hour	31	$	2,635.00	Round trip = 720 mile (10 hours); On-site 2 days (20 hours); Daily travel to/from site (30 miles RT * 2: 1 hours)
Staff Scientist/Engineer	0004	65.00	hour	62.5	$	4,062.50	Round trip = 720 mile (10 hours); On-site 5 days (50 hours); Daily travel to/from site (30 miles RT * 5: 2.5 hours)
Subtotal Professional Labor					**$**	**6,697.50**	
Expenses	**Contract Line Item**	**Rate**	**Unit**	**# of Units**		**Total**	
Pick-Up Truck (2)	0042	93.50	Day	11	$	1,028.50	4 days for 1 senior truck; 7 days for staff
Mileage	0060	0.50	mile	1,650	$	825.00	See lines 15 and 16
Per Diem	0058	95.00	Man-day	12	$	1,140.00	
PID	0012	30.00	Day	5	$	150.00	
Interface Probe	0021	20.00	day	5	$	100.00	
Combination Air monitor	0010	25.00	day	5	$	125.00	
Misc. Field Equipment	0061	35.00	Day	5	$	175.00	
Subtotal Expenses					**$**	**3,543.50**	
Subcontract Costs	**Contract Line Item**	**Rate**	**Unit**	**# of Units**		**Total**	
Geophysical	0027	6,380.00	Lump sum	1	$	6,380.00	
Line Day Lighting (mobilization)	0027	990.00	Lump sum	1	$	990.00	
Line Day Lighting (1, 10 hour day with back hoe/spotter)	0027	2,761.00	day	1	$	2,761.00	
Drilling Services Mob	0027	1,870.00	Lump sum	1	$	1,870.00	
Drilling Services (4 days)	0027	28,446.00	day	1	$	28,446.00	
Subtotal Subcontract Costs					**$**	**40,447.00**	
SUBTOTAL TASK 2:					**$**	**50,688.00**	
NMGRT @ 6.875%					**$**	**3,484.80**	
GRAND TOTAL TASK 2:					**$**	**54,172.80**	

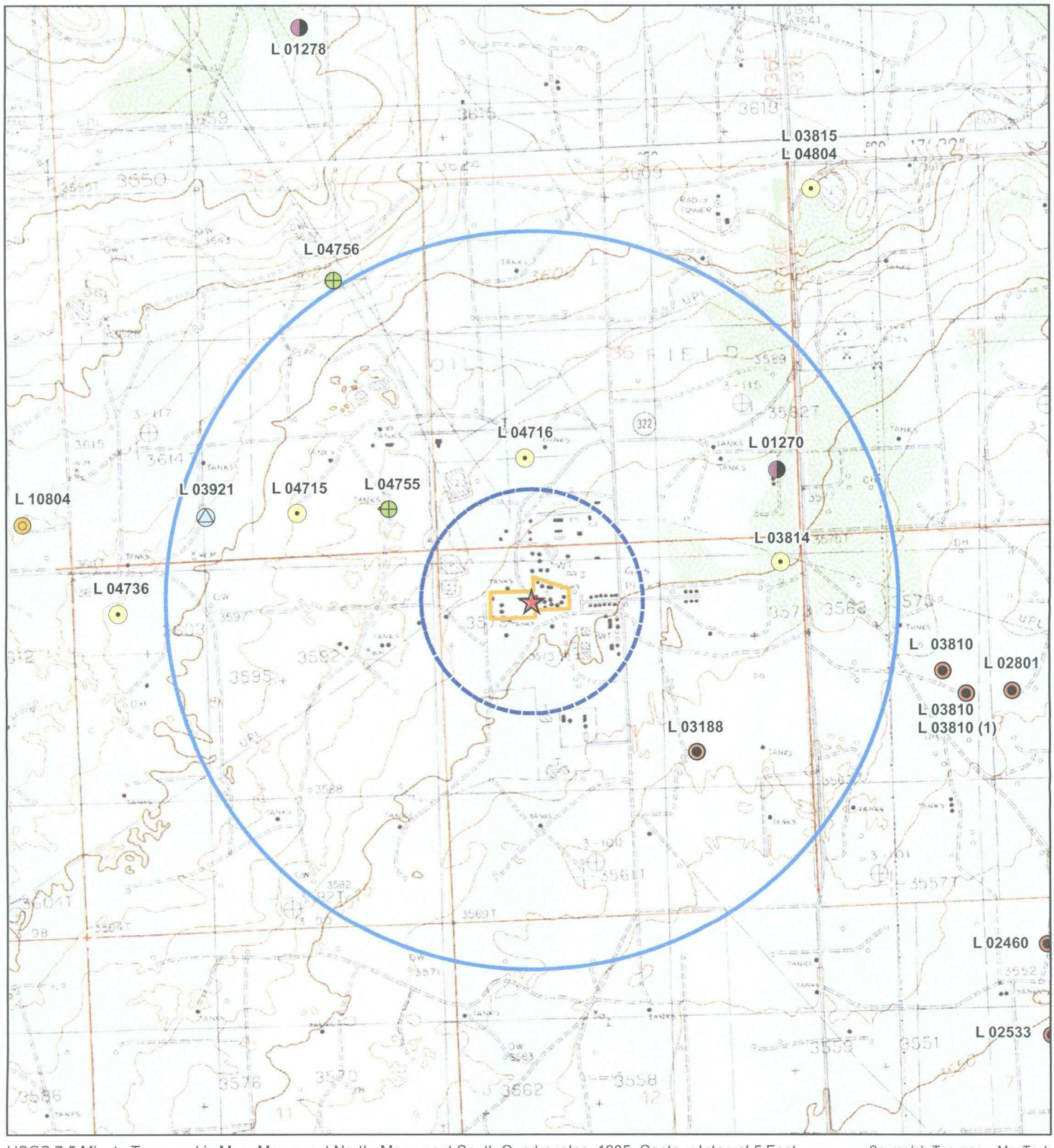
State of New Mexico
Oil Conservation Division
Phase II Investigation
Enersource Facility
Monument, New Mexico
February, 2007

Task 3. Report						
Professional Services	**Contract Line Item**	**Rate**	**Unit**	**# of Units**		**Total**
Principal	0001	125.00	hour	2	$	250.00
Senior Scientist/Engineer	0002	85.00	hour	32	$	2,720.00
Project Scientist/Engineer	0003	75.00	hour	6	$	450.00
Staff Scientist/Engineer	0004	65.00	hour	32	$	2,080.00
Field Technician II	0005	60.00	hour	6	$	360.00
Draftsperson II (Figures, Cross Sections)	0007	60.00	hour	32	$	1,920.00
Administrator (Technical Editor)	0008	55.00	hour	16	$	880.00
Clerk	0009	40.00	hour	4	$	160.00
Subtotal Professional Labor					**$**	**8,820.00**
SUBTOTAL TASK 5:					**$**	**8,820.00**
NMGRT @ 6.875%					**$**	**595.35**
GRAND TOTAL TASK 5:					**$**	**9,415.35**

Task 1 Total:	**$**	**5,295.00**
Task 2 Total	**$**	**50,688.00**
Task 3 Total	**$**	**8,820.00**
Project Subtotal	**$**	**64,803.00**
NMGRT = New Mexico Gross Receipts Tax (6.875%)	**$**	**4,455.21**
PROJECT GRAND TOTAL:	**$**	**69,258.21**

Notes:

NMGRT = New Mexico Gross Receipts Tax



USGS 7.5 Minute Topographic Map: Monument North, Monument South Quadrangles, 1985, Contour Interval 5 Feet
Site Location: NW¼ Sec. 1; T20S; R36E

Source(s): Top map – MapTech

0 1,000 2,000 4,000 Feet

N

S

Legend

- Property Boundary
- 1,000 Foot Radius
- 1 Mile Radius
- WATERS Database Well Location
  - DOM - Domestic
  - PRO - Prospecting/Dev. of Natural Resources)
  - EXP - Exploration
  - MUL - Multiple Domestic
  - POL - Polution Control
  - STK - Livestock Watering

INTERA

Figure 1
Project Location Map with Vicinity Wells

Enersource Site – Monument, NM

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